

# **ATTACHMENT 22**

## **AGENT MONITORING PLAN**

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## LIST OF ACRONYMS and TERMINOLOGY

### ACRONYMS

ACAMS	Automatic Continuous Air Monitoring System
ADAFc	ACAMS Dilution Air Flow Controller
AEL	Airborne Exposure Limit
AL	Alarm Level
AMP	Attachment 22, Agent Monitoring Plan
ASR	Agent Sampling Room
AWFCO	Automatic Waste Feed Cutoff
BSA	Buffer Storage Area
CAL	Chemical Assessment Laboratory
CAMDS	Chemical Agent Munitions Disposal System
CDC	Center for Disease Control and Prevention, Department of Health and Human Services
CDRL	Contract Data Requirements List
CHB	Container Handling Building
CMA	Chemical Materials Agency
CON	Control Room
COR	Corridor
CPA	Conversion Pad Assembly
CWM	Chemical Warfare material
CYC	Cyclone
DAAMS	Depot Area Air Monitoring System
DAL	Discharge Airlock
DCD	Deseret Chemical Depot
DFS	Deactivation Furnace System
DPE	Demilitarization Protective Ensemble
DSA	DPE Support Area
DUC	Duct
ECF	Entry Control Facility
ECL	Engineering Control Level
ECR	Explosive Containment Room
ECV	Explosive Containment Vestibule
EHM	Equipment Hydraulic Modules
FIL	Filter
GA	Nerve Agent GA, Tabun
GB	Nerve Agent GB, Sarin
GC/FPD	Gas Chromatograph / Flame Photometric Detector
GC/MSD	Gas Chromatograph / Mass Spectrometer Detector
GFP	Government Furnished Property
GPL	General Population Limit
H	Levinstein Mustard, or bis(2-chloroethyl) sulfide
HD	Blister Agent HD
HDC	Heated Discharge Conveyor
HT	Blister Agent HT (Thickened)
IDLH	Immediately Dangerous to Life and Health
LCO	Limiting Conditions of Operations



LIC	Liquid Incinerator
LOP	Laboratory Operating Procedure
LOQ	Limit of Quantification
LMQAP	Laboratory and Monitoring Quality Assurance Plan
LQCP	Laboratory Quality Control Plan, TOCDF Site Plan
LSS	Life Support System
LVS	Low-Volume Sampler
MCP	Monitoring Concept Plan
MDB	Munitions Demilitarization Building
MED	Medical Facility
MER	Mechanical Equipment Room
MON	Monitoring
MPB	Munitions Processing Bay
MPF	Metal Parts Furnace
MSB	Monitor Support Building
MUN	Munitions
NRT	Near Real-Time
OBS	Observation Corridor
ONC	On-Site Container
ORR	Operational Readiness Review
P&A	Precision and Accuracy
PAS	Pollution Abatement System
PDARS	Process Data Acquisition and Reporting System
PMB	Personnel Maintenance Building
PPE	Personnel Protective Equipment
PUB	Process Utilities Building
QA	Quality Assurance
QC	Quality Control
QP	Field Quality Control Samples
RCRA	Resource Conservation and Recovery Act
RDTE	Research Development Test and Evaluation
RL	Reporting Limit
RTAP	Real Time Analytical Platform
SDS	Spent Decontamination System
SEL	Source Emission Limit
SOP	Standard Operating Procedure
SPS	Secondary Power (Distribution) System
STEL	Short-Term Exposure Limit
TCB	Treaty Compliance Building
TMA	Toxic Maintenance Area
TOCDF	Tooele Chemical Agent Disposal Facility
TOX	Toxic Cubicle
UPA	Unpack Area
UPS	Uninterruptible Power Supply
VSL	Vapor Screening Limit
VX	Nerve Agent VX
WAP	Waste Analysis Plan
WHS	Warehouse
WPL	Worker Population Limit
Z	A generic designation of an applicable monitoring level such as STEL, WPL, VSL, GPL or SEL.

## TERMINOLOGY

**Action Level** - A pre-determined set point that triggers a specified action.

**AEL:** Airborne exposure limit is the allowable concentration in the air for workplace and general population exposures. AELs include worker population limits (WPLs), short-term exposure limits (STELs), Vapor Screening Limit (VSL), immediately dangerous to life or health values (IDLHs), and general population limits (GPLs).

**Alarm Level (AL):** Alarm Level at which the ACAMS (Near-Real Time) monitor will alarm to alert personnel of a potential upset conditions. All sampling and analytical monitors must, at a minimum, measure within  $\pm 25\%$  of the true concentration 95% of the time. Alarm levels are defined in Attachment 22, Appendix A.

**Baseline (Initial):** Before each individual agent campaign the monitoring system is operated in the configuration in which it will be used during the campaign. This is known as baseline operations. The purpose for the baseline is to provide evidence that the whole system will perform within required tolerances and requirements, and to document the configuration of the system at the time of the baseline. Once a system is baselined, the configuration of the system must not be changed (within limits) or the baseline has been violated and a new baseline must be performed.

**Category A Area:** The toxic processing area supported by the cascade ventilation system designated for probable liquid and vapor agent contamination (for example, munitions processing bay, toxic cubicle).

**Category B Area:** The toxic processing area supported by the cascade ventilation system designated for possible vapor agent contamination only.

**Category C Area:** The nontoxic work area adjacent to Category A or B areas that is supported by the cascade ventilation system designated for possible low-level vapor agent contamination (for example, observation corridors).

**Category D Area:** The nontoxic work area designation for areas considered uncontaminated.

**Category E Area:** The area designated for a positive pressure, filtered air environment (for example, Control Room).

**Distal End:** Location where the air sample enters into the sampling system except for the MPF Discharge Airlock and DAAMS duct monitors for VX. The distal end for VX at the MPF Discharge Airlock ACAMS and duct DAAMS is at the V/G conversion pad located five inches from where the sample enters the system. The MPF Discharge Airlock DAAMS V/G conversion pad is located 18 inches from where the sample enters the system when VX agent is monitored.

**ECL:** Engineering Control Level (ECL) is used to indicate that the sensitivity of the ACAMS at this location has been increased to provide representative readings in agent contaminated areas that are higher than the VSL and lower than IDLH monitoring.

**Engineering Control or Under Engineering Control:** When the environment in a room or area is under negative atmospheric pressure and the evacuated air is processed to remove contamination, the area or room is considered to be "under engineering control." An example is a munitions processing room that is expected to be contaminated with agent. The room is maintained under negative pressure to prevent agent leakage out of the room. The air that is evacuated from the room is filtered through carbon to remove the agent.

**G-Agents:** Either nerve agent GA (Tabun) or GB (Sarin).

**GPL:** General Population Limit: The allowable 72-hour time-weighted average concentration for the general population. The limit applies to the entire population, including all ages and medical conditions. For G-agents, the GPL is  $1 \times 10^{-6}$  mg/m<sup>3</sup> for 24 hours. For VX, the GPL is  $6 \times 10^{-7}$  mg/m<sup>3</sup> for 24 hours. For HD, the GPL is  $2 \times 10^{-5}$  mg/m<sup>3</sup> for 12 hours.

**H** – Levinstein Mustard, or bis(2-chloroethyl) sulfide. Mustard produced by the Levinstein process contains about 30 percent sulfur impurities. H is monitored as HD.

**HD** – Distilled Mustard, or bis(2-chloroethyl) sulfide. HD is H that has been purified by washing and vacuum distillation to reduce sulfur impurities. HD may be contaminated with trace concentrations of the blister agent L.

**HT** – Blister agent mustard composed of approximately 60 percent HD and 40 percent agent T {bis[2-(2-chloroethyl)io]ethyl}ether}. Both HD and T are alkylating agents. HT is monitored as HD.

**IDLH:** Immediately Dangerous To Life and Health (IDLH): The maximum concentration from which, in the event of a respirator failure, one could escape within 30 minutes without a respirator and without experiencing any escape impairing (for example, severe eye irritation) or irreversible health effects. IDLH levels are 0.1mg/m<sup>3</sup> for G-agents, 0.003 mg/m<sup>3</sup> for VX, and 0.7 mg/m<sup>3</sup> for mustard. The mustard IDLH is based only on non-carcinogenic effects. No IDLH has been established for carcinogens.

**Interferent:** An interferent is a chemical compound that will cause an Automatic Continuous Air Monitoring System (ACAMS), Depot Area Air Monitoring System (DAAMS) to false alarm or malfunction in such a way that they could not detect agent. There are some interferents that mask agent so it is not detectable, including some paints, lubricants, and even some foods. The DAAMS analysis is better at discriminating between agent and an interferent than the ACAMS. For this reason, DAAMS are paired with ACAMS at many locations for the purpose of confirming or denying alarms.

**Neat Agent:** Neat agent is agent that has not been diluted since manufacture or preparation. It may not be “pure” but it is as manufactured. Once it is diluted, it is no longer considered neat.

**QP:** Quality Plant sample: The quantitative result obtained from challenging an ACAMS/DAAMS or sample line with a solution prepared at a known concentration.

**RDTE Dilute Solutions:** RDTE Dilute Solutions are defined by the agent concentration and by the quantity in a single container. They are as follows:

<u>Agent</u>	<u>Maximum Total Quantity</u>	<u>Maximum Concentration</u>
G-agents	20 mg	2.0 mg/ml
VX	10 mg	1.0 mg/ml
Mustard	100 mg	10.0 mg/ml

**SEL:** Source Emission Limit, the SEL was previously known as the Allowable Stack Concentration (ASC). SEL is a ceiling value that serves as a source emission limit, and not as a health standard. It is used for monitoring the furnace ducts, and common stacks. The SEL provides an early indication of upset conditions, and must be accurately measurable in a timely manner. Modeling of worst –case credible and conditions at each installation must confirm that the general population limit (GPL) monitoring level is not exceeded at the installation boundary as a consequence of releases at or below the SEL. It should be noted when monitoring at the common stack, because of the high temperature and moisture content of stack emissions, a dilution control device is used for the ACAMS and DAAMS. The SEL value for G-agents and VX is 0.0003 mg/m<sup>3</sup> and mustard is 0.03 mg/m<sup>3</sup>.

**STEL:** Short Term Exposure Limit is the maximum concentration to which unprotected chemical workers may be exposed to for up to 15 minutes continuously. For G-agents, the STEL is  $1 \times 10^{-4}$  mg/m<sup>3</sup> four times daily. For VX, the STEL is  $1 \times 10^{-5}$  mg/m<sup>3</sup>, one time daily. For HD, the STEL is  $3 \times 10^{-3}$  mg/m<sup>3</sup>, one time per day.

**STEL Concentration:** A concentration equivalent to the STEL value but without time weighting (i.e., a one-cycle reading of a Near-Real Time monitor).

**VSL:** Vapor Screening Limit. A vapor concentration term that is independent of time. It may be used to define the level to which an item is monitored to determine the agent contamination level, or alternately, the readout of an NRT monitor. For G-agents, the VSL is  $1 \times 10^{-4} \text{ mg/m}^3$ . For VX, the VSL is  $1 \times 10^{-5} \text{ mg/m}^3$ . For HD, the VSL is  $3 \times 10^{-3} \text{ mg/m}^3$ .

**WPL:** Worker Population Limits. The average allowable concentration that an unmasked worker could be exposed to for an 8 to 12 hour workday 40 hours per week for 30 years without adverse effects. The WPL for TOCDF has been adjusted to reflect a 12-hour work shift. The 12-hour WPL for G-agents is  $2 \times 10^{-5} \text{ mg/m}^3$ , VX is  $6 \times 10^{-7} \text{ mg/m}^3$ , and HD is  $2.7 \times 10^{-4} \text{ mg/m}^3$ .

**Z:** A generic designation of an applicable monitoring level such as STEL, WPL, VSL, GPL or SEL.

## **AGENT MONITORING PLAN**

### **22.1 POLICY/GOALS OF MONITORING OPERATIONS**

#### **22.1.1 Purpose**

22.1.1.1 This Monitoring Plan contains monitoring requirements for Mustard (H, HT or HD) bulk and munitions processing, and processing of Mustard, VX and GB secondary waste., Secondary waste is only allowed per Conditions V.C.1.a.ii through V.C.1.a.viii for the purpose of this plan, the term “Mustard” may mean agents H, HT, or HD). This plan reflects the monitoring for each processing area when it is being used for agent work. When agent work in a given area is suspended, the monitoring for that area may be suspended as stated in Paragraphs 22.16.6, 22.19.2 or 22.19.3. Before campaigns other than those listed above commence, a revised monitoring plan shall be developed.

22.1.1.2 The primary purpose of Monitoring is to have near real-time analytical data to limit/prevent and document exposure of personnel to chemical warfare agents and protect the environment from the introduction of agents. Agent monitoring is also performed for process control purposes to identify upset conditions in the processes and to measure agent concentrations in toxic areas which allow management to make decisions on protective clothing requirements for entries into toxic areas.

#### **22.1.2 Perimeter Monitoring**

22.1.2.1 Monitoring of the perimeter of the Deseret Chemical Depot (DCD) is conducted by Chemical Agent Munitions Disposal System (CAMDS) personnel. Perimeter monitoring provides evidence and documents whether there is any chemical agent migration outside of DCD.

#### **22.1.3 TOCDF Station Numbering and Locations**

22.1.3.1 This Monitoring Plan provides a table of locations and station numbers (Appendix A & K) for agent monitors associated with TOCDF.

#### **22.1.4 Summarized Requirements**

22.1.4.1 Monitoring Operations monitors for Mustard bulk containers and munition processing and Mustard, VX and GB secondary waste. There are three configurations employed at TOCDF: ACAMS only, ACAMS with co-located DAAMS, and DAAMS only. ACAMS-only stations primarily are used in toxic areas to provide information to management for protective clothing determination for entries into toxic areas. ACAMS with co-located DAAMS serve two purposes, 1) the ACAMS is the primary monitor, which quantifies the amount of agent present. Concurrently, ACAMS provide an early warning system to plant personnel of a potential agent release at or above the alarm set points in Attachment 22, Appendix A. The co-located DAAMS are used to confirm or deny the presence of agent. 2) DAAMS tubes are also analyzed from these stations on a monthly rotational basis to monitor areas at the WPL. DAAMS only station are used for historical purposes to monitor areas at the WPL. The DAAMS historical tubes are not connected to an alarm. Historical DAAMS are located in areas not expecting to have agent. Response to ACAMS alarms are in accordance with Section 22.35.

### **22.2 RESPONSIBILITIES**

22.2.1 The Monitoring group supports TOCDF by operating and maintaining monitoring equipment and routinely collecting liquid and solid samples in and around the TOCDF

plant. Monitoring personnel may designate the sampling duties to a trained sample technician. The Monitoring Department utilizes a variety of monitoring equipment. Much of the equipment is Government Furnished Property (GFP), which is augmented by equipment, and supplies that are obtained from commercial vendors. Liquid and solid samples will be delivered to the Chemical Assessment Laboratory (CAL) for analysis. The analytical department personnel are responsible for performing the analysis or transferring the samples requiring analysis to a Utah certified subcontractor laboratory. Laboratory Quality Control personnel are responsible for inspecting and auditing all Laboratory (analytical and monitoring) operations.

## **22.3 COORDINATION**

22.3.1 There are several levels of coordination performed by within the Monitoring Department. Other than normal working relationships within the plant and at the CAL, there are three supervisory levels.

### **22.3.2 Monitoring Manager**

22.3.2.1 The Monitoring Manager coordinates additions or deletions of the workload such as new sampling or monitoring requirements. S/he will be the control point for any changes in monitoring or sampling parameters such as changes of sampling times or sample flows.

### **22.3.3 Monitoring Operations Supervisor**

22.3.3.1 The Monitoring Operations Supervisor works directly for the Monitoring Manager and coordinates the work load with the Team Leaders of all shifts. The supervisor will coordinate the timing of special monitoring and sampling operations with the Operations Supervisor and Plant Shift Manager.

### **22.3.4 Monitoring Team Leader**

22.3.4.1 The Monitoring Team Leader for each shift will coordinate the timing of routine monitoring and sampling operations with the Control Room (CON) personnel. This coordination is specified in the applicable Laboratory Operating Procedures (LOPs). The Team Leader or designated certified monitoring technician and at least one team member will respond to all ACAMS alarms in accordance with approved monitoring procedures and will be in direct contact with the Control Room.

## **22.4 OBJECTIVES OF THE MONITORING PLAN**

22.4.1 The Monitoring Plan provides identification of monitoring devices and sampling locations. The monitors are used to provide agent detection and measurement to aid in providing worker and general population protection, and to indicate plant operations are in control.

## **22.5 AGENT MONITORING ACTIVITIES**

22.5.1 Monitoring activities are structured to support toxic operations. Maintenance and QC activities for ACAMS are scheduled during times that do not interfere with plant operations. This is done by obtaining permission from the Control Room before any monitor or sampling device is taken out of service. The DAAMS is used for the collection of samples of agent for confirmation of ACAMS alarms and as primary monitoring in areas not monitored with ACAMS. The monitors listed in the Appendices must be operational when performing the operations they support except when off-line for challenging and corrective actions, as documented in approved procedures or monitoring has been suspended in accordance with this plan.

## **22.6 TOCDF PLANT MONITORING ACTIVITIES**

22.6.1 In the demilitarization plant area, hazard category classifications and personnel occupancy are the factors used to determine monitoring activities. When monitoring is conducted for personnel protection or to assess potential personnel exposure it must be sufficient to identify, verify, and quantify the agent. VSL and WPL monitoring is performed in areas of the facility where workers may have a potential exposure to chemical warfare agent. Selected "C" hazard category areas of the plant have WPL monitoring conducted on a daily basis for all work areas where chemical agent is present without secondary vapor containment and workers are not required to wear respirator protection, while other "C" hazard category areas have WPL monitoring conducted on a monthly basis in accordance with this plan.

## **22.7 CATEGORIES OF PLANT AREAS**

### **22.7.1 Toxic and Process Areas**

22.7.1.1 These areas are potentially contaminated as a result of the presence of uncontained liquid agent or agent vapor. An example is the Munitions Processing Bay (MPB). This area is monitored using an ACAMS. The agent concentrations determine the Personnel Protective Equipment (PPE) that is required for personnel entry. At times, the monitoring may be enhanced to allow the PPE for specific toxic areas to be reduced to enhance worker mobility. This requires Safety Manager approval. This could include changing the ACAMS to a more sensitive detection level or adding DAAMS in order to confirm or deny an ACAMS alarm. Toxic Area ACAMS are used to quantify potential exposure of personnel.

### **22.7.2 Toxic Process Area Airlocks**

22.7.2.1 Airlocks serve as access/egress points between contaminated areas and clean work areas. To limit the transfer of agent from "toxic" areas to "work areas", under normal conditions, items and personnel are cleared through an airlock. Procedures govern egress through airlocks to prevent items or personnel from exiting toxic areas until they have been monitored by an ACAMS. Agent readings must be less than the level set by egress procedures to clear items and personnel from the airlock.

### **22.7.3 Outside of Toxic Process Areas**

22.7.3.1 The Unpack Area (UPA) is an area where agent vapor is not normally expected, but a potential exists for low-level vapor contamination. This area is considered as "under engineering control" and is monitored at the VSL and WPL level daily.

22.7.3.2 Observation corridors are hallways that run adjacent to toxic areas. The corridors are considered to be "under engineering controls" and are monitored at the VSL daily and at the WPL level at least monthly.

### **22.7.4 Work Areas**

22.7.4.1 At the TOCDF site, there are many work areas where toxic operations are not conducted. These areas are not "under engineering control" and have little or no potential for vapor contamination. These areas are not monitored for agent. Inside the MDB, examples of work areas include the Chiller Room, Electrical Rooms, Battery Room, Switchgear Room, and UPS Rooms. Examples of work areas outside the MDB include the PUB and warehouses.

### **22.7.5 Lunch Rooms**

22.7.5.1 Lunch Rooms inside process areas require WPL monitoring. This is a safety requirement to verify that workers have not carried contamination into these areas.

## **22.7.6 Positive Pressure Areas**

22.7.6.1 These are areas in which there are no agent operations and no potential for vapor contamination. These areas are maintained at a positive pressure with carbon filtered air. This allows personnel in these areas to perform without the need of a mask or protective clothing, if an upset agent conditions existed outside of engineering controls. Examples of these areas are the Control Room (CON), and DPE Support Area (DSA). Monitoring is not required in these areas.

## **22.8 FILTER MONITORING**

22.8.1 Multiple Bank Carbon Filter units provide negative pressure ventilation for potentially contaminated areas throughout the plant. A description of the Munitions Demilitarization Building (MDB) ventilation carbon filters is located in Attachment 5 (Inspection Plan), Paragraph 5.9. Filter monitoring is performed at the VSL level in order to detect evidence of filter degradation in order to allow changing of the filter media before there is a possibility of an agent leak to the atmosphere.

22.8.1.1 The MDB HVAC filter stack shall be monitored with ACAMS and DAAMS for any agents being processed in the furnaces. Additionally, on the MDB stack, only DAAMS tubes shall be required to monitor for agents from past campaigns, if the contaminated charcoal has been removed after the completion date of the campaign. If the first three filters are not changed out after an agent campaign, then the MDB HVAC stack shall be monitored with ACAMS and DAAMS for agents from these past campaigns. Filter stack DAAMS samples, shall be collected and analyzed every 12 hours. In addition, HVAC DAAMS tubes shall be collected and analyzed if an associated ACAMS goes into an alarm.

22.8.1.2 The MDB HVAC filter mid-bed locations shall be monitored continuously with DAAMS for any agents being processed in the facility (filter online or offline). Sample stream switches shall be used to allow one or more ACAMS to monitor the mid-beds, alternately, for any agents being processed in the plant (filter online or offline). Locations of the midbed ACAMS and DAAMS tubes are specified in Attachment 22, Appendix A. DAAMS tubes monitoring the midbeds or vestibule shall be analyzed if the midbed ACAMS goes into alarm.

22.8.1.3 The CAL filter stack shall be monitored with ACAMS and DAAMS for Mustard, GB and VX. The tubes shall be collected and analyzed when an associated ACAMS goes into alarm.

22.8.1.4 The CAL DAAMS tubes, located in the midbeds (Attachment 22, Appendix A), shall monitor for GB, VX and Mustard and shall be analyzed daily.

22.8.2 If a confirmed ACAMS agent reading on the mid-beds reaches 3 VSL or any agent being monitored, the change-out of the filters shall commence as specified in Module X.

## **22.9 SAMPLING PARAMETERS**

22.9.1 The operational control limits for sampling parameters such as sample flow rate and duration of sample time are under configuration control and documented in precision and accuracy studies before "Base Line" monitoring is performed and can only be changed by the Monitoring Manager following approved procedures.



## **22.10 DATA HANDLING**

22.10.1 Monitoring parameters, such as flow rates and sample collection start and end times are recorded and accompany the sample to the laboratory. Comments pertaining to equipment malfunction (such as failure to sequence) are currently recorded in logbooks at each station and the information transferred to and maintained in a database. Before eliminating ACAMS and DAAMS station logbooks, the TOCDF must demonstrate to the Executive Secretary that the electronic recording and data retrieval system performs such that all pertinent information is readily retrievable (written approval from Executive Secretary required). Sample problems are also annotated with pertinent information. This information is used to identify the need for corrective action to prevent recurring deficiencies. The corrective action may consist of such things as additional training or changing the types of preventive maintenance for particular types of equipment. All raw data from ACAMS, including calibrations and challenges, (except those at the CAL and some areas in the plant as noted in the Table in Appendix A) are gathered on the Process Data Acquisition and Reporting System (PDARS) in the Control Room and maintained in a database. The ACAMS strip-chart is used to evaluate agent concentration and alarm cycle time.

## **22.11 QUALITY CONTROL**

### **22.11.1 TOCDF QM (Quality Management) Program**

22.11.1.1 Confidence in sampling methods that characterize actual ambient concentrations of agent in a given matrix is of utmost importance. An extensive QA Program is required to ensure the quality of monitoring data is adequate for its intended use. The programmatic Laboratory and Monitoring Quality Assurance Plan (LMQAP) and the Monitoring Concept Plan (MCP) are guidance documents for all laboratories supporting agent demilitarization operations. The TOCDF Laboratory Quality Control Plan (LQCP) and the TOCDF Agent Monitoring Plan (AMP) were prepared in accordance with the requirements of the LMQAP and MCP. The TOCDF LQCP and TOCDF AMP (Attachment 22) must be at least as stringent as the programmatic guidance.

### **22.11.2 Failure To Monitor**

22.11.2.1 All of the monitoring identified in this plan must be operating and in control during processing in a given area or it will be considered a “Missed Monitoring” and will be reported as such. The following are exceptions:

22.11.2.2 During campaign changeover transition periods when monitors are being changed to a new agent campaign.

22.11.2.3 When a Temporary Change has been approved (see Paragraph 22.15.3).

22.11.2.4 If the ACAMS is offline for more than one and a half hours, the DAAMS becomes the primary monitor and therefore must be analyzed. This does not apply to the HVAC stack, common stack or ducts.

22.11.2.5 If mitigating measures have been taken to secure an area and processing has ceased, then monitoring at that station will not be considered a “missed monitoring.” This does not apply to the HVAC stack, common stack or ducts.

## **22.12 NOTIFICATION PROCEDURES**

- 22.12.1.1 The PDARS in the Control Room collects data from each ACAMS and stores the readings in a temporary computer file. A computer in the Control Room uses this file to access agent readings from each ACAMS. These readings may be displayed on demand in the Control Room and at the MSB. The ACAMS shall alarm at each location when detected agent concentrations meets or exceed the alarm set points. ACAMS that monitor toxic areas under engineering control may not have a local alarm. (See Section 22.28) This is because the ACAMS would be constantly in alarm.
- 22.12.2 In the event of an ACAMS alarming at or above the alarm level, outside of engineering controls, or in category “C” areas or at the CAL, the Control Room will notify the Monitoring Team Leader or designee. The Team Leader or designated certified monitoring technician along with one other Monitoring person will respond by going to the location of the ACAMS that is in alarm. Monitoring personnel evaluate alarms by observing the chromatogram and troubleshooting for malfunctions, verifying the alarm level set point, challenging an ACAMS with an agent standard to ensure that it is operating correctly, and collecting the associated DAAMS tubes for analysis. The Alarm Response Requirements are specified in Section 22.35. If the alarm is confirmed by DAAMS, appropriate corrective measures are taken as specified in Attachment 3, (TOCDF LQCP). When it is believed that the area has been cleaned, the area monitor will determine if the corrective measure was adequate. If results are less than the alarm level set point, normal operations may commence.
- 22.12.3 The Control Room (CON) shall monitor the CAL ACAMS alarms and shall notify Monitoring per the requirements of Paragraph 22.12.2. If the CAL has an alarm, neat agent operations at the CAL shall be suspended. If the alarm causes TOCDF to fail to meet LCO requirements, waste feed shall cease for all furnaces at TOCDF.
- 22.12.4 All ACAMS alarms, which have co-located DAAMS, require analysis of the DAAMS tube(s). In addition, all alarms at the common stack will require that the DAAMS tubes be pulled and analyzed on all operating furnace ducts. The analytical results of the DAAMS tubes, pulled due to an ACAMS alarm, shall be reported to the CON. The CAL will maintain the official record of all DAAMS results.

## **22.13 CONTROL LIMITS FOR ACAMS**

- 22.13.1 All ACAMS that monitor the common stack and any VX ACAMS located in the ducts shall be challenged every 4 hours plus or minus 30 minutes in accordance with TE-LOP-524. All other duct ACAMS shall be challenged daily. The ACAMS challenge results are collected electronically for all plant ACAMS connected to PDARS. The data for the CAL ACAMS and ACAMS not connected to PDARS are recorded manually and then archived. These data are used to assess the performance of individual units and the performance of the overall monitoring system. The TOCDF LQCP details the pass/fail criteria. The performance of the ACAMS is tracked daily and any ACAMS that falls into the fail category is corrected or replaced.

## **22.14 MONITOR/MONITORING LOCATIONS**

- 22.14.1 The monitors within the TOCDF site were placed in locations to maintain minimum distances to the actual sampling point while keeping the equipment out of hazardous areas. For the actual monitoring locations at TOCDF, see Appendix A and the associated drawings.

## **22.15 MONITORING PLAN**

### **22.15.1 List of Monitors**

22.15.1.1 Appendix A outlines the monitoring stations for operations of the TOCDF site except for the perimeter monitors. The perimeter monitoring is the responsibility of CAMDS.

### **22.15.2 LIMITING CONDITIONS OF OPERATION (LCOs)**

22.15.2.1 The monitors identified for a given campaign must be operating at all times and are considered to be Limiting Conditions of Operations (LCOs). In the event that a monitor is not capable of operating, immediate corrective actions will be taken. (See Paragraph 22.15.3).

### **22.15.3 Temporary Changes**

22.15.3.1 Temporary changes may be made to the requirements of this plan by following the normal TOCDF procedures, which provide proper approvals and documentation. This will allow for adding to, reducing the number of, or changing the configuration of agent monitors on a temporary basis. The Permittee shall notify the Executive Secretary orally of any reduced monitoring applicable to this Attachment prior to implementation.

### **22.15.4 Additional Support**

22.15.4.1 Occasionally support from DCD or CAMDS is required for additional monitoring support. This may include the use of Real Time Analytical Platform (RTAPs) for increased area monitoring, or an upset condition, and the operation of DAAMS station GPL001.

## **22.16 MONITORING STRATEGY**

### **22.16.1 Worker Population Limit (WPL) Monitoring**

22.16.1.1 Worker Population Limit (WPL) monitoring will be performed with DAAMS. The WPL monitoring is conducted daily for all work areas where chemical agent is present without secondary vapor containment and workers are not required to wear respirator protection. Also, the Category C areas where agent is not present are monitored on a monthly basis.

### **22.16.2 Short Term Exposure Limit (STEL) and Vapor Screening Limit (VSL) Monitoring**

22.16.2.1 VSL monitoring will be performed at all workplace locations as specified in Appendix A.

22.16.2.2 DAAMS will be used to confirm a VSL exceedance, except for bagged items incoming air will be minimized to prevent dilution of sample when clearing bagged items. The filter stacks use the VSL monitoring limit on the ACAMS itself, but any confirmed release will be reported in a concentration ( $\text{mg}/\text{m}^3$ ).

22.16.2.3. STEL and VSL are equivalent in terms of concentration values, but are different in that STEL is based on a 15 minute time-weighted average and that VSL is independent of time.

### **22.16.4 Source Emission Limit (SEL)**

22.16.4.1 SEL is a ceiling value that serves as a source emission limit, and not as a health standard. It is used for monitoring the furnace ducts, and common stacks. Staggered ACAMS which monitor continuously are required on the common stack for each agent being processed. DAAMS are used as confirmation for any ACAMS alarms above the alarm level. A Waste Feed Cutoff for all incinerators/furnaces is initiated when an alarm at or above the alarm level is exceeded at the common stack. The incinerator/furnace ducts shall be monitored with ACAMS and DAAMS for any agent being processed. When the

primary ACAMS are undergoing calibration or maintenance a standby ACAMS shall be monitoring the ducts for the agent being processed.

## 22.16.5

### AEL LEVELS

	G-agents mg/m <sup>3</sup>	VX mg/m <sup>3</sup>	H-agents mg/m <sup>3</sup>
STEL (15-Minutes)	0.0001	0.00001	0.003
WPL <sup>1</sup> (12-Hours)	0.00002	0.0000006	0.00027
WPL <sup>2</sup> (8-Hours)	0.00003	0.000001	0.0004
WPL <sup>2</sup> (4-Hours)	0.00006	0.000002	0.0008
SEL	0.0003	0.0003	0.03
IDLH (30-Minutes)	0.1	0.003	0.7
VSL	0.0001	0.00001	0.003
Notes:  <sup>1</sup> The 12-hour WPL monitoring level will be used for routine historical monitoring and for areas where munitions are stored outside of secondary containment (UPA).  <sup>2</sup> The 8-hour monitoring level will be used for LSS air monitoring irregardless of actual sample time. The 4-hour monitoring level is used only for VX if the detection limit can not be achieve due to interferences			

## 22.16.6

### Monitoring Cessation

#### 22.16.6.0

Confirmation monitoring may be suspended once agent has been confirmed to be present (NRT-only monitoring will be required to verify effectiveness of corrective actions). Once corrective actions have been resolved, confirmation monitoring shall be re-instituted. Any ACAMS alarm, without co-located DAAMS, is assumed to be agent.

#### 22.16.6.1

Agent specific monitoring may be halted if no corresponding waste is inside the facility boundaries. Once an agent waste enters the facility boundaries, monitoring must be reinstated for that agent in locations specified in Appendix A. This condition does not apply to the HVAC (and CAL) stack.

## 22.17

### MONITORING EQUIPMENT

#### 22.19.1

The following is a discourse of the types of equipment used for agent monitoring:

## **22.17.1 ACAMS**

22.17.1.1 The ACAMS is a near-real-time monitor system with the ability to detect and report the concentration levels of chemical agent in the air at either low levels or high levels depending on its monitoring configuration. The ACAMS is configured for the appropriate detection level and the current agent(s) locations. The ACAMS is equipped with remote, audible, and visible alarm systems. The ACAMS samples air during a preset sample period. Agent present in the sample air stream is collected on a solid sorbent bed during the sample period for gas chromatographic (GC) analysis. The results of the GC analysis of the sampled air are displayed on the front panel of the instrument. A permanent record of the chromatogram and the agent concentration is recorded on a strip-chart. The ACAMS produces an audible and visible alarm when the agent concentration level is at or above the preset alarm level. The PDARS records the alarm time and agent concentration. In the case of the common stack and furnace duct ACAMS; the chromatogram is also recorded by the PDARS. The ACAMS are used to detect process upsets and are located in areas where concentrations of agents are of concern or where rapid response is required to allow personnel to work in lower levels of protective dress.

22.17.1.3 Process areas where high concentrations of agents are possible, a Low-Volume Sampler (LVS) may be utilized. The LVX operates in a toxic or process area by drawing air through the LVS, retaining a 1-ml sample. It then sends that 1-ml sample to the ACAMS, which analyzes it and reports the actual agent concentration of the area being sampled. This process is necessary to prevent saturating the ACAMS.

## **22.17.2 DAAMS**

22.17.2.1 An additional monitoring system used is the DAAMS. DAAMS involve passing sampled air through a sorbent bed where any agent would be collected. The sample periods are determined by P&A study results and will be in the range of three minutes to twelve hours. DAAMS analysis is performed using a Class 1 quantitative method. However, when DAAMS are used in conjunction with an ACAMS, the results are used to confirm or refute the presence of agent. If an ACAMS is not monitoring correctly, the DAAMS tubes become the primary monitor and must be collected and analyzed. DAAMS samples provide independent confirmation of positive ACAMS readings and a historical record of monitoring, in areas not monitored by ACAMS, at the WPL and GPL locations.

22.17.2.1.1 DAAMS tubes shall use a bar code system to track the specific station and agent of each tube. All confirmed DAAMS results, greater than the reporting limit (RL), shall be reported to the control room immediately. All confirmed sub-RL levels shall be tracked and trended by the laboratory.

### **22.17.2.1.2 NO<sub>x</sub> Filters**

In order to retain chemical agent Mustard on the DAAMS tube, NO<sub>x</sub> pre-filters shall be required for Mustard sample collection. The NO<sub>x</sub> pre-filters used on the inlet to the DAAMS tube and shall be used during the entire time of aspiration of the DAAMS sample. NO<sub>x</sub> pre-filters will be tested by visually inspecting the nitrogen oxides pre-filter for cracks, packing separation, and other physical defects. All Mustard sample line challenges shall be completed through the NO<sub>x</sub> filter. Mustard pre-filters are not required for ACAMS due to the short duration of the sample time.

- 22.17.2.1.3 NO<sub>x</sub> pre-filters shall be replaced on the common stack and duct monitoring instrumentation daily (24 hours  $\pm$  4 hours). All other NO<sub>x</sub> pre-filters shall be replaced at a frequency not to exceed 14 days.

### **22.17.3 Sample Lines.**

- 22.17.3.1 The agent sampling lines are heated to aid in the transmission of the sample. Appendices C&D show the configuration of the sampling assembly. They consist of Teflon sample line with self-regulating heat tape. Sample lines for stations MED 904V and MED 904G are not required to be heated. These ACAMS and DAAMS sample lines shall be challenged at the end of the sample line every 60 days  $\pm$  3 days. All other ACAM challenges for these stations (MED 904V and MED 904G) may be performed at the ACAMS. Other sample lines may not be heat traced as long as all challenges are performed at the end of the sample line. In these cases the line is challenged with agent to prove transmission of the agent down the sample line.

- 22.17.3.2 All sample lines must be challenged and demonstrate transmission efficiency prior to the commencement of operations. After the completion of the initial sample line challenge, all non-toxic sample lines must be challenged at least every 60 days  $\pm$  3 days.

- 22.17.3.3 Samples lines in toxic areas are challenged during campaign changeover.

### **22.17.4 Sample Lines (Suffixed with “S”)**

- 22.17.4.1 Monitoring stations whose station number is suffixed by an "S" (spool) are to be used for special or short term monitoring only. The purpose of the “S” stations is to allow monitoring in specific locations that do not have a regularly assigned ACAMS. The station equipment consists of a sample line only.

- 22.17.4.2 When the monitoring is performed, an adjacent ACAMS will be connected to the “S” sample line. In some cases the lines are arranged on a spool to allow it to be reeled out and moved to the point that needs sampling. The ACAMS that are used in conjunction with the “S” sample lines have switches (or PDARS software) that designates the station in use. The purpose of the switch is to identify the correct monitoring location to PDARS. This causes the ACAMS data to be cataloged to the correct sampling point and therefore provide accurate traceability of monitoring results.

- 22.17.4.3 During the time the ACAMS is connected to the spool sample line, the DAAMS that was associated with the original ACAMS becomes the primary monitor for that location. This means that the DAAMS tubes must be analyzed, rather than serving the function of being confirmation DAAMS that only get analyzed in the event of an ACAMS alarm. Additionally, if the ACAMS alarms while connected to the spool, there are no DAAMS tubes to serve the confirmation function. If there are readings on the ACAMS while it is in the spool mode, it must be assumed to be agent.

### **22.17.5 Silver Fluoride Pads**

- 22.17.5.1 There are six styles or types of V/G conversion pad assemblies for use with VX ACAMS and DAAMS stations when TOCDF is processing VX waste. They are designed to place the conversion pads in the sample stream such that the pads are exposed to the sample stream and be capable of converting a quantifiable amount of VX to the G-analog of VX. Without the conversion, the monitoring equipment will not detect VX. All assemblies will contain at least two V/G Conversion pads held in place close to the sample input path. Additional pads do not aid or hinder the conversion efficiency. A detailed description of each type is located in TE-LOP-528, V/G Conversion Pad Assembly.

- 22.17.5.2 In order for VX to transfer down a monitoring sample line, the compound must be converted to a more volatile compound; G-analog which is a derivative of VX that closely resembles GB. To facilitate this conversion, two silver fluoride impregnated pads, or V /G pads are used.
- 22.17.5.3 The stack and duct ACAMS/DAAMS conversion pads shall be replaced every 4 hours plus or minus 30 minutes. The pads shall be challenged before replacement, so that the conversion pads that have been in service are part of the challenge to ensure adequate transfer. If the pads challenge is outside 75-125% recovery, qualification of data is required.
- 22.17.5.4 During VX secondary waste processing, the toxic area ACAMS conversion pads shall be changed each time a toxic entry team enters into an area monitored by the toxic area ACAMS. One exception to this requirement would be if the team re-enters an area and the conversion pads had been previously changed during their entry.
- 22.17.5.5 During VX secondary waste processing, all non-toxic area VSL ACAMS and DAAMS conversion pads shall be changed daily. The ACAMS are challenged daily. The sample line is challenged at the distal end at a minimum of every 60 days  $\pm$  3 days.
- 22.17.5.6 The Filter midbed, and Filter Vestibule ACAMS may be challenged at the ACAMS instead of the distal end of the sample probe if the agent concentration was below 1.0 VSL for each agent reading. The conversion pads must be changed at a minimum of every 28 days for agent readings less than 1.0 VSL and weekly if each agent reading were at or above 1.0 VSL for VX.
- 22.17.5.7 Test data must be submitted and approved by the Executive Secretary to reduce monitoring requirements presented above.
- 22.17.5.8 All DAAMS conversion pad assemblies shall have the same corresponding change-out frequency at the monitoring levels specific in 22.17.5.3 through 22.17.5.6.
- 22.17.5.9 For VX LSS DAAMS Stations, the conversion pads must be changed at a minimum of every 28 days for agent readings less than 1.0 WPL. The LSS stations are decertified for use when an agent reading reaches 1.0 WPL or above (22.16.5). If agent is detected at or above 1.0 WPL see Section 22.21 and 22.16.5. Additional requirements for the Life Support System are defined in paragraph 22.21.

## **22.18 STACK CONFIGURATION**

- 22.18.1 Agent monitoring of the furnace stack effluent consists of ACAMS and DAAMS.

### **22.18.2 ACAMS**

- 22.18.2.1 There are three ACAMS assigned to monitor the common stack for each agent being processed.). Two of the ACAMS for each agent are on line constantly. Their operating cycles are staggered to allow one unit to be in the analysis mode while the other is sampling, this gives continuous monitoring of the common stack. DAAMS analysis is used for alarm confirmation. The third ACAMS serves as a standby unit when one of the other units is off-line for challenging or corrective action. The three ACAMS for each agent are linked to the PDARS individually. An alarm is sounded in the CON if the ACAMS cycling does not provide 100% monitoring of the common stack for each agent.

If this occurs, an AWFCO is initiated and DAAMS analysis is required for the period the ACAMS was not staggered sampling the common Stack.

### **22.18.3 DAAMS**

22.18.3.1 There are three DAAMS tubes aspirating at all times on each DAAMS manifold. They are the **A** tube, a **B** confirmation tube, and a **C** contingency tube. A fourth tube, which is a **QP**, is also aspirated in accordance with the TOCDF LQCP. The sampling equipment is designed such that a sample is being collected constantly, even when a set of tubes is being replaced. The stack and furnace duct DAAMS will have a “no-flow” audible alarm to warn operators when the DAAMS is not operating.

### **22.18.4 Dilution Air Flow Controllers**

22.18.4.1 Both the ACAMS and DAAMS use dilution airflow controllers. They are designated as the ACAMS Dilution Air Flow Controller (ADAFc), which is shown in Appendix G and the DAAMS Dilution Air Flow Controller (DDAFc), which is shown in Appendices E and F. The purpose of the dilution flow controllers is to inject dry air into the sample stream to prevent the liquid in the sample from condensing in the sampling equipment, keeping the sample above the dew point. The dilution flow controllers are designed such that the flow control device has a feedback signal to a flow meter. This feedback signal causes the ratio of the sample flow to stay constant once the two are locked together. Therefore, the unit compensates for any interruptions in the sample flow and maintains the correct ratio. The agent concentration in the DAAMS tubes is calculated using the volume of sample air, not the dilution air. The same theory of operation holds true with the ACAMS. The ACAMS are calibrated disregarding the quantity of dilution air. The dilution air can be considered a carrier for the sample. The agent concentration is based on the volume of the sample. Additionally, the ACAMS has software that allows it to calculate agent concentrations even when there is a change in the sample flow rate. Since the flow ratio is controlled by the dilution flow controller and the ACAMS can compensate for flow changes, the two units in conjunction give accurate agent readings even when there are sample flow rate changes.

## **22.19 FURNACE STACK AND DUCT MONITORING**

### **22.19.1 Calibrating, Challenging, or Servicing**

22.19.1.1 The ACAMS at monitoring duct locations PAS 702 (DFS), PAS 703 (MPF), PAS 704 (LIC1), and PAS 705 (LIC2) may be taken off-line during waste feed to challenge, calibrate, or service for up to one hour each operating day, midnight to midnight, provided at least two staggered ACAMS monitoring for each agent being processed in the common stack are on-line. A standby ACAMS is located at each duct location to avoid exceeding the one-hour limit.

### **22.19.2 Suspended Monitoring (Furnace Ducts Only)**

22.19.2.1 Monitoring of the furnace ducts leading to the common stack may be suspended, if all three of the following requirements are met. First, agent feed has been suspended with the furnace and afterburner continuing at operating temperature for a minimum of one hour following the end of agent feed. Second, a confirmed agent reading at or above the alarm set point is absent for a 24-hour period and Standard Operating Procedures (SOPs) are in place identifying procedures for furnace operation and isolation of contaminated hardware within the furnace system. Third, the Chemical Materials Agency (CMA) Site Project Manager or designee approves procedures isolating contaminated materials (e.g. piping, etc.) from the respective furnace and its PAS. The third condition may not be



applicable if there are no contaminated materials in the furnace system (including the input airlock to the MPF). Furnace duct monitoring will resume 24 hours before the agent gun is installed in a LIC, or before waste feed commences in the DFS or MPF.

### **22.19.3 Suspended Common Stack Monitoring**

22.19.3.1 Common stack monitoring will not be suspended without CMA TOCDF Site Project Manager or designee and the Executive Secretary approval.

## **22.20 MONITORING FOR AGENT FROM PAST CAMPAIGNS**

22.20.1 Monitoring in Category A and B areas, including LSS Air Monitoring, for past agent contamination may be discontinued when the airborne agent contamination for that area is less than 1.0 VSL over a 24-hour period, at a minimum temperature of 70° F, with the ventilation system operating at the approved flow rates. A confirmed agent reading at or above 1.0 VSL requires that the area must undergo additional decontamination. LSS hose monitoring for past agent may be discontinued if the hoses are less than 1.0 WPL.

22.20.2 Monitoring in Category C areas for past agent campaign contamination may be discontinued when the Category C area has been less than 0.5 WPL<sup>(12-hour)</sup> for each agent being discontinued over a 24-hour period, , with the adjacent A& B area ventilation systems operating at the approved flow rates at a minimum temperature of 70°F. Monitoring data shall be submitted to the Executive Secretary for approval prior to discontinuation of any agent monitor in a C area.

## **22.21 LIFE SUPPORT SYSTEM (LSS) AIR HOSE MONITORING**

22.21.1 The Life Support System (LSS) air hoses are monitored using DAAMS samples. All of the hoses on a given air manifold are sampled with two DAAMS tubes. The TOCDF Safety Department evaluates all LSS air analytical data daily for determining the certification for each LSS air station. The LSS air stations will be decertified for use when agent is confirmed at or greater than 0.00003 mg/m<sup>3</sup> for G agents, 0.000001 mg/m<sup>3</sup> for VX, and 0.0004 mg/m<sup>3</sup> for H series agent.

## **22.22 ACAMS DATA COLLECTION**

22.22.1 Plant ACAMS are integrated into the PDARS. The PDARS stores all readings taken by each ACAMS to a temporary computer file. From this file, a computer is able to compile trends from each ACAMS for up to 72 hours and, upon demand, display these trends to graphics screens in the Control Room and the MSB. Various automated reports are used to observe these trends to be used as a management tool to make improvements and determine the level of readiness of the overall ACAMS system. This temporary file is compressed to an archival file that becomes the permanent record of agent readings. From the archival file, the computer is able to trend each connected ACAMS for any desired time period. Results of all ACAMS challenges are electronically recorded and, additionally, they are manually recorded in the ACAMS logbook (see Section 22.10.1 for any potential exceptions to manually recorded logbooks) at each instrument. These results provide a basis for statistical analysis to assess performance and for reporting to regulatory agencies. The CAL and other areas in the plant as noted in Appendix A do not have PDARS, therefore, the ACAMS chart recorder and instrument log are used to record readings and QC data that are then archived.

**22.23. DAAMS SYSTEM**

22.23.1 The DAAMS sampling system is capable of collecting agent GB, GA and VX by use of Chromosorb and HD with Tenax sorbent beds. The sample is then analyzed using GC/FPD or with MSD analysis techniques. The total volume of air sampled is calculated from the sampling time and the sample flow rate. Desorption of the DAAMS tube into a GC/FPD for analysis provides the total mass of agent collected. The average air concentration of agent is then calculated from this data. By increasing the sample time or flow rate, the average concentration sensitivity can be increased. DAAMS stations shall report agent concentration at or above their calculated reporting limit for the agent of interest. The lowest calibration standard used for analysis must be at or below the reporting limit.

**22.24. BACKUP EQUIPMENT**

22.24.1 The function of the ACAMS is to rapidly detect agent. Should a needed instrument fail, the first response is to troubleshoot and repair it in place. Should the estimated repair time be excessive (as determined by the CON) the ACAMS will be replaced with an ACAMS from the contingency stock.

**22.25. MAINTENANCE**

22.25.1 The Monitoring Technicians and Instrument Technicians have completed mandatory ACAMS training at the Chemical Demilitarization Training Facility (CDTF) and are qualified to maintain and operate ACAMS. The manufacturer's manuals and LOPs provide necessary guidance.

**22.26. START UP OF MONITORING**

22.26.1 Agent monitoring in the TOCDF plant and the CAL will be initiated in each area as needed. A Monitoring Plan for each campaign must have approval from the CMA TOCDF Site Project Manager or Designee. The monitoring identified in the "campaign specific" plan will be started in sufficient time to allow baseline data collection. The operational readiness review (ORR) for the campaign shall include review of the plan and the baseline data. The information in this plan is the basis for all campaign specific plans.

**22.27. SPECIAL ON-SITE CONTAINER (ONC) MONITORING**

22.27.1 Special monitoring shall be required whenever an On-Site Container (ONC) or over pack-containing agent has remained in the Container Handling Building (CHB) for more than seven days. The interior of the ONC or over pack will be monitored with a DAAMS or ACAMS. The determination of which to use is based on equipment availability and how fast the results are needed.

**22.28. ACAMS ALARM HORN**

22.28.1 There are cases where ACAMS have an alarm in the Control Room but there is no local alarm. This is a safety measure. There are areas that have frequent alarms but it does not mean that the workers in the area must mask. It is important that the workers do not become accustomed to ignoring ACAMS alarms. Some examples are: Toxic Area ACAMS and airlock ACAMS. In all of these cases an alarm does not indicate that the

people in the location of the ACAMS need to mask. ACAMS that have the horn disconnected must have a sign at the ACAMS indicating such.

**22.29 ACAMS ALARM LEVEL**

22.29.1 The set point for the ACAMS agent alarms is specified in the monitoring station tables (Attachment A). Due to the design characteristics of the ACAMS and the software that operates the alarm, there may be slight variations in the actual alarm level for each ACAMS.

**22.30 PORTABLE ACAMS and DAAMS MONITORING TRAILERS**

22.30.1 There are a minimum of two Portable Monitoring Trailers housing ACAMS and DAAMS at TOCDF. They are for special short-term monitoring to support short-term activities.

**22.31 CARBON FILTERS ON ACAMS**

22.31.1 In special circumstances, an ACAMS purpose is not to provide monitoring on a continuous basis (e.g. ACAMS for monitoring ONCs, and ACAMS for monitoring charcoal change-out at the Filter Farm.) When these types of ACAMS are operating but not sampling the area for which they are intended, a charcoal filter may be installed at the ACAMS.

**22.32 MPF DISCHARGE AIRLOCK (MPF DAL) ACAMS and DAAMS**

22.32.1 The ACAMS for the MPF Discharge Airlock samples filtered air except when monitoring the discharge airlock. Low-temperature monitoring protocol requires the DAL to be cooled to less than 600° F prior to agent monitoring for GB and VX wastes or 700° F for mustard wastes, munitions, and bulk containers. High-temperature monitoring is defined as greater than or equal to 700°F for mustard munitions and bulk containers.

22.32.2 All secondary wastes that are processed are monitored via low-temperature monitoring.

22.32.3 During monitoring, if the ACAMS alarms, the item is moved back into Zone 3 for additional processing time for a minimum of 15 minutes.

22.32.4 The Permittee has the option to perform low-temperature monitoring instead of high temperature monitoring on any munitions or bulk container.

22.32.5 If processing VX secondary waste the V/G conversion pad assemblies for both the ACAMS and DAAMS will be changed prior to monitoring each tray. Sample line challenges will be performed at 1.0 VSL at a minimum of once every 12-hour operating shift, within four hours from the start of the shift while processing for both ACAMS and DAAMS.

22.32.6 Reserved.

22.32.7 Reserved.

22.32.8 MPF DAL maintenance of the sampling systems shall follow the procedure in Attachment 3 (Sampling, Analytical and QA/QC Procedures) for the ACAMS and DAAMS systems.

**22.33 ACAMS and DAAMS AT EQUIPMENT HYDRAULIC MODULE**

22.33.1 The ACAMS and DAAMS at the Equipment Hydraulic Module (EHM) Station #EHM 354, only monitors the EHM when personnel are inside the EHM. An alarm light is installed inside the EHM for personnel safety. If the ACAMS and DAAMS are offline or are online but not sampling air from the EHM, the alarm light shall be on. Personnel shall be denied entry into the EHM until the ACAMS and DAAMS are online sampling

air from the EHM.

## 22.34 FUGITIVE EMISSIONS MONITORING

22.34.1 If a leak is discovered in any equipment in an agent processing area at TOCDF, that leak shall be monitored for agent using an ACAMS. The method used for this monitoring will be a modified Method 21 from 40 CFR, Part 60 using an ACAMS for agent.

Method Requirements	TOCDF Capabilities	Mitigation/Justification
A portable or area instrument will be used to monitor leaks for Volatile Organic Compounds (VOCs)	The area ACAMS will be used or a portable monitor that is configured for the specific VOC (agent).	N/A
The VOC instrument detector shall respond to the compounds being processed, and both the linear response range and measurable range of the instrument shall encompass the leak concentration.	The ACAMS meets this criterion, being calibrated with the compound of interest.	N/A
The scale of the instrument meter shall be readable to +/- 2.5% of the specified leak definition concentration when performing a no detectable emission survey.	The ACAMS meter readout is digital, so the concentration is displayed with easy to read numbers.	N/A
The instrument shall be equipped with an electrically driven pump to insure that a sample is provided to the detector at a constant flow rate. The rate will be 0.10 to 3.0 LPM, measured at the probe tip.	The ACAMS complies with this requirement, with a normal flow rate of 0.40 to 1.0LPM.	N/A
The instruments shall be intrinsically safe, as defined by U.S.A. standards for use in any explosive atmospheres that may be encountered in its use.	The ACAMS sample line meets this requirement since the ACAMS unit is not inside the explosive environment.	N/A
The instrument shall be equipped with a probe or probe extension for sampling not to exceed 1/4 inch outside diameter, with a single opening for admission of a sample.	The ACAMS meets this requirement 1/4 inch outside diameter is the standard for ACAMS sample lines and probes.	N/A
The instrument response factors for the VOC to be measured shall be less than 10. The response factor is the ratio of the known concentration of a VOC compound to the observed meter reading when measured using an instrument calibrated with the specified reference compound.	The ACAMS meets this criterion.	N/A
The instrument response time shall be equal to or less than 30 seconds, with all sampling equipment connected and operating.	The ACAMS does not meet this criterion. But, this is a special application, sampling for a	The ACAMS is the best available technology for agent sampling.

Method Requirements	TOCDF Capabilities	Mitigation/Justification
	specific compound.	Since the ACAMS must collect a sample before analysis, the 5-minute response time is as fast as TOCDF can get, while still maintaining accurate results.
The calibration precision must be equal to or less than 10 percent of the calibration gas value.	The ACAMS meets this criterion, except that the ACAMS uses a liquid calibration standard. By TOCDF procedure the calibration challenge must be +/- 10 % of the target value.	N/A

**NOTE**

**The challenge, calibration and operation of the ACAMS will comply with TOCDF Laboratory Operating Procedure (LOP) 524 in Attachment 3 (Sampling and Analytical Procedures) and this Attachment.**

**22.35 ALARM RESPONSE REQUIREMENTS**

**22.35.1 Common Stack Alarm for Mustard, VX or GB**

22.35.1.1 If the ACAMS alarms at or above 0.2 SEL for any agent a RCRA Automatic Waste Feed Cut-Off (AWFCO) shall be initiated for all furnaces/incinerators. Monitoring personnel shall be deployed. DAAMS tubes shall be pulled and analyzed on the stack and ducts of all operating furnaces/incinerators. Alarm levels for agents from past campaigns are listed in Appendix A.

**22.35.2 Duct (MPF/DFS/LIC1/LIC2) Alarms for Mustard, VX or GB**

22.35.2.1 If the ACAMS alarms at or above 0.2 SEL for GB or Mustard or 0.5 SEL for VX, a RCRAAWFCO for that furnace/incinerator shall be initiated. Monitoring personnel shall be deployed to investigate the alarm. The duct DAAMS tubes shall be pulled and analyzed if any alarm at or above the alarm set point for the agents being processed.

**22.35.3 HVAC Stack Alarm for Mustard, VX or GB**

22.35.3.1 If the ACAMS, monitoring the HVAC stack, alarms at or above the agent alarm set point the. Monitoring personnel shall be deployed. DAAMS tubes shall be pulled and analyzed.

22.35.3.2 If agent is confirmed, no additional agent may be brought into the plant without Executive Secretary approval.

**22.35.4 Workplace Monitoring for Mustard, VX and GB (Categories C and D Areas)**

22.35.4.1 If the ACAMS indicates (in CON) that the agent level is at or above the action level of

0.2 VSL then the CON shall notify Monitoring and Monitoring shall respond and verify ACAMS operation and pull DAAMS tubes. If the ACAMS alarm level is at or above the alarm set point (Appendix A), then the DAAMS tubes shall be pulled and analyzed.

**APPENDIX A**

**AGENT MONITORING PLAN**

**FOR MUSTARD MUNITIONS AND BULK CONTAINERS**

**AND**

**GB, Mustard and VX SECONDARY WASTE**

## **AGENT MONITORING PLAN**

### **Explanation of Column Titles**

#### **Station Number**

The station number was assigned by Monitoring in accordance with the Monitoring Station Numbering Sheet. This is the number used by PDARS. The letters are used to identify the area monitored, i.e., AL for Airlock, OBS for Observation Corridor. The numbers are specific to the geographic location being monitored. This number cannot be reassigned to any other location due to the restraints caused by the 40-year record-keeping requirement. When an S suffixes a station number, it indicates that the sample line is movable to various sample points. The S indicates spool. A G suffix to a station number indicates that the station monitors for GB, when a station is suffixed with a V, it indicates the station monitors for VX, and station numbers suffixed with an H monitor for Mustard agents.

#### **ACAMS/DAAMS Tag Number**

This number identifies the tag number for the ACAMS or DAAMS specific to that station number. If an ACAMS or DAAMS is removed for repair and a new ACAMS or DAAMS is installed at that station, the tag number will stay with the new ACAMS or DAAMS. This is to prevent the need to update the Monitoring Plan each time maintenance is required. Temporary DAAMS are installed with an assigned sample number instead of a tag number. Monitoring will track the ACAMS or DAAMS being repaired using the unit's serial number.

#### **Unit Location**

This designates the detector's physical location by room, floor plan number, and the drawing number (from the attached Monitoring Plan drawings).

#### **Area Monitored**

This designates the geographic location being monitored by room and floor plan number.

#### **Power Type**

UPS - Battery backup used on ACAMS. DAAMS using the same station number will be connected to UPS.

SPS - Commercial power backed up by an emergency generator. DAAMS only (and possibly DAAMS located on a cart with an ACAMS and DAAMS, but with its own station number) will use the Secondary Power (Distribution) System (SPS), or UPS if available. The heat trace cable for all sample lines are on SPS power.

#### **Sample Point Hazard Category**

A through E, with "A" being a room where liquid agent is likely to be present to "E" where no agent will be found. See Terminology Section for complete definition.

#### **Monitoring Level**

Indicates the purpose of the ACAMS or DAAMS stations and corresponding monitoring level or sensitivity of the monitor. If VSL is listed, the purpose of the ACAMS is to monitor equipment/waste/personnel contamination levels. When ECL is listed, the location is being monitored at a more sensitive level than required by CMA direction. In other words, if ECL/VSL is listed, the monitors are in the VSL mode but are more sensitive than required by the Programmatic Monitoring Concept Plan for that monitoring location. The agent concentrations for each monitoring level are specified in Attachment 22, Appendix A.



**Alarm Level**

The alarm level at the ACAMS station is the same as it is in the Control Room. The alarm level shown is in terms of the monitoring level shown in the previous column. The alarm levels are set below threshold levels to allow action to be taken to avoid exceeding threshold levels. The alarm level starts a specific course of actions. The specific requirements are identified in Section 22.35 (Alarm Response Requirements). An alarm located in toxic areas, filter mid-beds, inside ONCs or other closed containers do not require the contingency procedures to be implemented.

**Sample Line Length**

Lengths of the sample lines are listed with an accuracy of  $\pm 20\%$ .

**DAAMS Mode**

The mode is an indication of the purpose of the DAAMS. Examples are:

ACAMS Confirmation: The DAAMS is used to confirm an ACAMS reading in the event of an alarm.

Historical: The DAAMS is used in an area that is unlikely to have agent contamination and is to provide evidence at least monthly that there hasn't been any detectable concentration in that area.

Primary DAAMS: In this case the DAAMS is the only agent monitor, in cases such as LSS air monitoring.

**Comments**

Additional information as needed.

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
CHB 104H	218	218	CHB UNPACK AREA 02-201 01-ID-28-001-9-D2	UNPACK AREA RM 02-201	UPS	C	VSL/WPL	0.5	69'	ACAMS CONFIRM	
CHB 107AH	229	N/A	CHB UNPACK AREA 02-201 01-ID-28-001-9-D2	UPA-ONC RM 02-201	UPS	N/A	VSL	0.5	65'	N/A	NOTE 5
CHB 107BH	289	N/A	CHB UNPACK AREA 02-201 01-ID-28-001-9-D2	UPA-ONC RM 02-201	UPS	N/A	VSL	0.5	65'	N/A	NOTE 5
CHB 152H	173	143	EAST STORAGE 96-102 07-ID-28-005-C1	EAST UNLOAD RM 96-101	UPS	D	VSL/WPL	0.5	25'	ACAMS CONFIRM	
CHB 153H	178	147	WEST STORAGE 96-104 07-ID-28-005-1-C4	WEST UNLOAD RM 96-105	UPS	D	VSL/WPL	0.5	45'	ACAMS CONFIRM	
CHB 155H	174	144	E CONT STORAGE 96-102 07-ID-28-005-1- C1	EAST STG RM 96-102	UPS	D	VSL/WPL	0.5	90'	ACAMS CONFIRM	
CHB 156H	177	146	W CONT STORAGE 96-104 07-ID-28-005-1-C3	WEST STG RM 96-105	UPS	D	VSL/WPL	0.5	60'	ACAMS CONFIRM	
UPA 203H	125	125	UPA 02-214 01-ID-28-001-9-C3	ECRA FEED CONVEYORS RM 02-214	UPS	C	VSL/WPL	0.5	55'	ACAMS CONFIRM	
UPA 204H	120	122	UPA 02-214 01-ID-28-001-9-C3	UPA RM 02-214	UPS	C	VSL/WPL	0.5	24'	ACAMS CONFIRM	NOTE 22
UPA 204HS	120	N/A	UPA 02-214 01-ID-28-001-9-C3	UPA RM 02-214	UPS	N/A	VSL	0.5	100'	N/A	SAME ACAMS AS UPA 204H NOTE 2
UPA 205H	122	121	CHB/UPA 02-201 01-ID-28-001-9-C2 UNDER FRESH AIR DUCT	UPA RM 02-214	UPS	C	VSL/WPL	0.5	30'	ACAMS CONFIRM	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
UPA 205HS	122	N/A	CHB/UPA 02-201 UNDER DUCT 01-ID-28-01-9-C2	UPA RM 02-214	UPS	N/A	VSL	0.5	100'	N/A	SAME ACAMS AS UPA 205H NOTE 2
UPA 207H	127	127	UPA 02-214 01-ID-28-001-9-C3	ECRB FEED CONVEYORS RM 02-214	UPS	C	VSL/WPL	0.5	85'	ACAMS CONFIRM	
ECV 208H	232	N/A	UPA 02-214 01-ID-28-001-9-C2	ECV RM 04-213	UPS	A/B	ECL/VSL	1.5/0.5	125'	N/A	
AL 210H	483	N/A	UPA 02-214 01-ID-28-001-9-C2	ECV RM 04-213	UPS	A/B	ECL	10	125'	N/A	
AL 211H	326	N/A	UPA 02-214 01-ID-28-001-9-C2	ECV AIRLK A	UPS	A/B	VSL	0.5	45'	N/A	
LSS 213H	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-C4	MUN CORR 05-210 LSS 22B	NOT REQUIRED	N/A	WPL	N/A	25'	PRIMARY	NOTE 12
AL214H	327	N/A	UPA 02-214 01-ID-28-001-9-C2	ECV AIRLK B	UPS	A/B	VSL	0.5	100'	N/A	
LSS 216H	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-C3	UPA 02-214 LSS 41A	NOT REQUIRED	N/A	WPL	N/A	2'	PRIMARY	NOTE 12
LSS 217H	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-C-4	DPE SUIT SEALER 09-204 LSS 21	NOT REQUIRED	N/A	WPL	N/A	10'	PRIMARY	NOTE 12
LSS 218H	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-D4	AIRLK "B" RM 06-220 LSS 22C	NOT REQUIRED	N/A	WPL	N/A	17'	PRIMARY	NOTE 12
AL 221H	157	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "B" RM 06-220	UPS	B	VSL	0.5	70'	NA	
AL 222H	147	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "A" RM 06-221	UPS	A	ECL/VSL	1.5/0.5	70'	N/A	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
AL 222V	383	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "A" RM 06-221	UPS	A	VSL	40	70'	N/A	NOTE 17
AL 222VS	383	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "B" RM 06-220	UPS	A/B	VSL	40	70'	N/A	NOTE 17
AL 223H	435	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "A" RM 06-221	UPS	A	ECL	1.5	70'	N/A	
MER 254H	328	104	MER 20-133 01-ID-28-001-3-D2	MER RM 20-133	UPS	D	VSL/WPL	0.5	67'	ACAMS CONFIRM	
LSS 255H	N/A	PORTABLE	MER 20-133 01-ID-28-001-3-D2	LSS AFTER AIR DRYERS RM 20-133	NOT REQUIRED	N/A	WPL	N/A	N/A	PRIMARY	NOTE 12
LSS 256H	N/A	PORTABLE	CHILLER ROOM 20-129 01-ID-28-001-4-B4 (ABOVE DOOR)	STAIR WAY #1 RM 35-128 LSS 21A	NOT REQUIRED	N/A	WPL	N/A	23'	PRIMARY	NOTE 12
DFS 257H	119	103	MER 20-133 01-ID-28-001-3-D2	AIRLOCK EGRESS RM16-135	UPS	C	VSL/WPL	0.5	60'	ACAMS CONFIRM	
CYC 258H	330	326	PAS 01-ID-28-001-3-D1	DFS CYCLONE BIN	UPS	B	VSL	0.5	9'	ACAMS CONFIRM	NOTE 7, 17
CYC 260H	330	326	PAS 01-ID-28-001-3-D1	DFS CYCLONE BIN ENCLOSURE	UPS	C	VSL	0.5	9'	ACAMS CONFIRM	NOTE 7
LSS 265H	N/A	PORTABLE	LSS AIR MANIFOLD RM 09-216 01-ID-28-001-8-D3	LSS AIR MANIFOLD RM 09-216	NOT REQUIRED	N/A	WPL	N/A	10'	PRIMARY	NOTE 12
MUN 302H	133	N/A	OBS COR RM 09-204 01-ID-28-001-9-A4	MUN COR RM 05-210	UPS	A/B	ECL/ VSL	1.5/0.5	120'	N/A	
OBS 303H	117	383	OBS COR RM 09-204 01-ID-28-001-9-B4	OBS COR RM 09-204	UPS	C	VSL/WPL	0.5	35'	ACAMS CONFIRM	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
OBS 303V	N/A	154	OBS COR RM 09-204 01-ID-28-001-9-B4	OBS COR RM 09-204	UPS	C	WPL	NA	35'	PRIMARY	NOTE 17 & 22
LSS 305H	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-B4	MUN CORR RM 05-210 LSS 26A	NOT REQUIRED	N/A	WPL	N/A	87'	PRIMARY	NOTE 12
LSS 305V	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-B4	MUN CORR RM 05-210 LSS 26A	NOT REQUIRED	N/A	WPL	N/A	87'	PRIMARY	NOTE 12 & 17
LSS 306H	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-A4	MUN CORR RM 05-210 LSS 25A	NOT REQUIRED	N/A	WPL	N/A	100'	PRIMARY	NOTE 12
LSS 309H	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 36C	NOT REQUIRED	N/A	WPL	N/A	100'	PRIMARY	NOTE 12
LSS 309V	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 36C	NOT REQUIRED	N/A	WPL	N/A	100'	PRIMARY	NOTE 12 & 17
LSS 314H	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-D3	MUN CORR RM 05-210 LSS 26B	NOT REQUIRED	N/A	WPL	N/A	61'	PRIMARY	NOTE 12
LSS 314V	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-D3	MUN CORR RM 05-210 LSS 26B	NOT REQUIRED	N/A	WPL	N/A	61'	PRIMARY	NOTE 12 & 17
MUN 317H	322	N/A	OBS COR 09-207 01-ID-28-001-8-C3	MUN COR 05-210	UPS	A/B	ECL/VSL	1.5/0.5	100'	N/A	SAMPLE LINE RELOCATED AS NEEDED
LSS 318H	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 34D	NOT REQUIRED	N/A	WPL	N/A	80'	PRIMARY	NOTE 12
LSS 318V	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 34D	NOT REQUIRED	N/A	WPL	N/A	80'	PRIMARY	NOTE 12 & 17
ECR 320H	329	N/A	OBS COR 09-204 01-ID-28-001-9-B4	ECR "A" RM 03-211	UPS	A	ECL/VSL	1.5/0.5	100'	N/A	SAMPLE LINE RELOCATED AS NEEDED

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
ECR 321H	105	N/A	OBS COR 09-204 01-ID-28-001-9-B4	ECR "B" RM-03-212	UPS	A	IDHL/ECL/VSL	110/1.5/0.5	80'	N/A	SAMPLE LINE RELOCATED AS NEEDED
ECR 321V	372	N/A	OBS COR 09-204 01-ID-28-001-9-B4	ECR "B" RM-03-212	UPS	A	IDLH/ECL/VSL	400/400/40	80'	N/A	SAMPLE LINE RELOCATED AS NEEDED (NOTE 17)
ECR 322H	482	N/A	OBS COR 09-204 01-ID-28-001-9-B4	ECR "A" RM 03-211	UPS	A	ECL	10	80'	N/A	SAMPLE LINE RELOCATED AS NEEDED
ECR 322HS	482	N/A	OBS COR 09-204	ECR "B" RM-03-212	UPS	A	ECL	10	80'	N/A	SAMPLE ACAMS AS ECR 322H
TOX 349H	423	N/A	OBS COR 09-142 01-ID-28-001-2-C4	TOXIC CUBICLE 11-141	UPS	A	IDLH/ECL/VSL	110/10/0.5	67'	N/A	
TOX 349V	465	N/A	OBS COR 09-142 01-ID-28-001-2-C4	TOXIC CUBICLE 11-141	UPS	A	IDLH/ECL/VSL	400/400/40	67'	N/A	NOTE 17
TOX 349G	424	N/A	OBS COR 09-142 01-ID-28-001-2-C4	TOXIC CUBICLE 11-141	UPS	A	IDLH/ECL/VSL	400/400/40	67'	N/A	NOTE 17
DFS 350H	126	N/A	MER 20-133 01-ID-28-001-3-D2	DFS ROOM RM 16-136	UPS	B	ECL/VSL	1.5/0.5	75'	N/A	
AL 351H	316	325	OBS COR 09-142 01-ID-28-001-2-C4	AIRLK "C" RM 06-139	UPS	C	VSL/WPL	0.5	30'	ACAMS CONFIRM	
HDC 353H	339	N/A	MER 20-133 01-ID-28-001-3-D2	HDC COLLECTION BIN	UPS	B	VSL	0.5	80'	N/A	NOTE 5 & 18
EHM 354H	104	111	OBS COR 09-142 01-ID-28-001-2-C2	EHM RM 18-138	UPS	B	VSL/WPL	0.5	52'	ACAMS CONFIRM	
EHM 355H	149	N/A	OBS COR 09-142 01-ID-28-001-2-C3	AIRLOCK B RM 06-137	UPS	B	VSL	0.5	56'	N/A	DPE EGRESS
EHM 355HS	149	N/A	OBS COR 09-142 01-ID-28-001-2-C3	OBS COR 09-142 & DFS "B" AIRLOCK	UPS	N/A	VSL	0.5	100'	N/A	SAME ACAMS AS EHM 355H

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
SDS 356H	216	N/A	OBS COR 09-142 01-ID-28-001-2-C3	SDS RM 21-140	UPS	A	IDLH/ECL/VSL	110/1.5/0.5	100'	N/A	
OBS 359H	108	113	OBS COR 09-142 01-ID-28-001-2-C3	OBS CORR RM 09-142	UPS	C	VSL/WPL	0.5	24'	ACAMS CONFIRM	
OBS 359V	N/A	379	OBS COR 09-142 01-ID-28-001-2-C3	OBS CORR RM 09-142	UPS	C	VSL/WPL	0.5	24'	PRIMARY	NOTE 17 & 22
LSS 361H	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D4	MUN CORR RM 05-153 LSS 9A	NOT REQUIRED	N/A	WPL	N/A	20'	PRIMARY	NOTE 12a
LSS 361V	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D4	MUN CORR RM 05-153 LSS 9A	NOT REQUIRED	N/A	WPL	N/A	20'	PRIMARY	NOTE 12 & 17
LSS 363H	N/A	PORTABLE	OBS COR 09-121 01-ID-28-001-5-C4	TMA RM 12-120 LSS 2A	NOT REQUIRED	N/A	WPL	N/A	60'	PRIMARY	NOTE 12
LSS 366H	N/A	PORTABLE	OBS COR 09-173 01-ID-28-001-6-C3	AIRLK "B" RM 06-170 LSS 2B	NOT REQUIRED	N/A	WPL	N/A	25'	PRIMARY	NOTE 12
LSS 368H	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D4	MUN CORR RM 05-153 LSS 9B	NOT REQUIRED	N/A	WPL	N/A	26'	PRIMARY	NOTE 12
LSS 369 H	N/A	PORTABLE	OBS COR 09-173 01-ID-28-001-6-C3	AIRLK "B" RM 06-170 LSS 9C	NOT REQUIRED	N/A	WPL	N/A	19'	PRIMARY	NOTE 12
LSS 371H	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C3	SDS RM 21-140 LSS 40A	NOT REQUIRED	N/A	WPL	N/A	32'	PRIMARY	NOTE 12
MON 376H	344	N/A	MON ROOM 09-123 01-ID-28-001-5-D4	ASR AIRLOCK  RM 09-123A	UPS	N/A	VSL	0.5	35'	N/A	NOTE 14
MON 377H	360	375	MON ROOM 09-123 01-ID-28-001-5-D4	MON ROOM RM 09-123	UPS	C	VSL/WPL	0.5	18'	ACAMS CONFIRM	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
MON 378H	343	368	MON ROOM 09-123 01-ID-28-001-5-C4	ASR ROOM 09-123A 01-ID-28-001-5-D3	UPS	C	VSL/WPL	0.5	30'	ACAMS CONFIRM	
LSS 379H	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C3	OBS COR 09-142 LSS19	NOT REQUIRED	N/A	WPL	N/A	2'	PRIMARY	NOTE 12
DUC 402H	172	N/A	OBS COR 09-207 01-ID-28-001-8-C3	MPB DUCT RM 10-205	UPS	A	IDLH/ECL/VSL	110/10/0.5	90'	N/A	
DUC 402V	466	N/A	OBS COR 09-207 01-ID-28-001-8-C3	MPB DUCT RM 10-205	UPS	A	IDLH/ECL/VSL	400/400/40	90'	N/A	NOTE 17
DUC 402G	337	N/A	OBS COR 09-207 01-ID-28-001-8-C3	MPB DUCT RM 10-205	UPS	A	IDLH/ECL/VSL	400/400/40	90'	N/A	NOTE 17
OBS 404H	114	140	OBS COR 09-207 01-ID-28-001-8-C2	OBS CORR RM 09-207	UPS	C	VSL/WPL	0.5	75'	ACAMS CONFIRM	
OBS 404HS	114	N/A	OBS COR 09-207 01-ID-28-001-8-C2	OBS COR RM 09-207	UPS	N/A	VSL	0.5	100'	N/A	SAME ACAMS AS OBS 404H NOTE 2
OBS 404V	N/A	380	OBS COR 09-207 01-ID-28-001-8-C2	OBS CORR RM 09-207	UPS	N/A	WPL	NA	100'	PRIMARY	NOTE 17 AND 22
OBS 407H	113	119	OBS COR 09-203 01-ID-28-001-8-A3	OBS CORR RM 09-203	UPS	C	VSL/WPL	0.5	45'	ACAMS CONFIRM	
OBS 408H	115	145	OBS COR 09-219 01-ID-28-001-8-A4	OBS CORR RM 09-219	UPS	C	VSL/WPL	0.5	12'	ACAMS CONFIRM	
OBS 408HS	115	N/A	OBS COR 09-219 01-ID-28-001-8-A2	OBS COR RM 09-219	UPS	N/A	VSL	0.5	100'	N/A	SAME ACAMS AS OBS 408H NOTE 2
LSS 423H	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	AIRLK "B" RM 06-218 LSS 25C	NOT REQUIRED	N/A	WPL	N/A	32'	PRIMARY	NOTE 12



STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
LSS 424H	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	MPB PLTFR RM 10-205 LSS 35A	NOT REQUIRED	N/A	WPL	N/A	15'	PRIMARY	NOTE 12
LSS 424V	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	MPB PLTFR RM 10-205 LSS 35A	NOT REQUIRED	N/A	WPL	N/A	15'	PRIMARY	NOTE 12 & 17
LSS 425H	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	AIRLK AB RM 06-218 LSS 35B	NOT REQUIRED	N/A	WPL	N/A	32'	PRIMARY	NOTE 12
LSS 425V	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	AIRLK AB RM 06-218 LSS 35B	NOT REQUIRED	N/A	WPL	N/A	32'	PRIMARY	NOTE 12 & 17
DPE 427H	141	148	OBS COR RM 09-207 01-ID-28-001-8-C3	DPE SUIT RM 09-216	UPS	C	VSL/WPL	0.5	100'	ACAMS CONFIRM	
AL 428H	143	N/A	STAIR WELL 2 35-206 01-ID-28-001-8-D4	AIRLK "A" RM 06-217	UPS	A	ECL/VSL	1.5/0.5	75'	N/A	
AL 428V	363	N/A	STAIR WELL 2 35-206 01-ID-28-001-8-D4	AIRLK "A" RM 06-217	UPS	A	ECL/VSL	40	75'	N/A	NOTE 17
AL 428VS	363	N/A	STAIR WELL 2 35-206 01-ID-28-001-8-D4	AIRLK "B" RM 06-218	UPS	A	VSL	40	75'	N/A	NOTE 2 & 17
AL 429H	140	N/A	STAIR WELL 2 35-206 01-ID-28-001-8-D4	AIRLK "B" RM 06-218	UPS	B	VSL	0.5	80'	N/A	
AL 430H	325	N/A	OBS COR 09-207 01-ID-28-001-8-C3	AIRLK "A" RM 06-217	UPS	N/A	ECL	1.5	100'	N/A	
AL 450H	315	N/A	OBS COR 09-121 01-ID-28-001-5-C4	SAMPLE WAND TMA AIR LOCK 12-117	UPS	N/A	VSL	0.5	60'	N/A	
AL 450G OR V	384	N/A	OBS COR 09-121 01-ID-28-001-5-C4	SAMPLE WAND TMA AIR LOCK C 12-117	UPS	N/A	VSL	0.5	60'	N/A	NOTE 17

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
OBS 451H	106	106	OBS COR 09-145 01-ID-28-001-2-A2	OBS CORR RM 09-145	UPS	C	VSL/WPL	0.5	45'	ACAMS CONFIRM	
BSA 452H	118	N/A	OBS COR 09-148 01-ID-28-001-2-A3	BSA RM 17-146	UPS	A	ECL/VSL	10/0.5	49'	N/A	
TMA 453H	230	N/A	OBS COR 09-121 01-ID-28-001-5-C4	TMA RM 12-120	UPS	A	ECL/VSL	1.5/0.5	75'	N/A	
OBS 454H	166	161	OBS COR 09-121 01-ID-28-001-5-D4	OBS CORR RM 09-121	UPS	C	VSL/WPL	0.5	22'	ACAMS CONFIRM	
OBS 454HS	166	N/A	OBS COR 09-121 01-ID-28-001-5-D4	OBS CORR RM 09-121	UPS	N/A	VSL	0.5	100'	N/A	SAME ACAMS AS OBS 454H NOTE 2
MUN 455H	131	N/A	OBS COR 09-115 01-ID-28-001-1-D4	MUN CORR RM 05-153	UPS	A/B	ECL/VSL	1.5/0.5	80'	N/A	
DEC 456H	159	NA	OBS COR 09-115 01-ID-28-001-5-B4	DECON HOOD RM 12-118	UPS	B	VSL	0.5	100'	N/A	
DEC 456V	467	N/A	OBS COR 09-115 01-ID-28-001-5-B4	RM 12-118	UPS	B	VSL	0.5	100'	N/A	NOTE 17
DEC 456G	361	N/A	OBS COR 09-115 01-ID-28-001-5-B4	RM 12-118	UPS	B	VSL	0.5	100'	N/A	NOTE 17
MON 457H	112	118	OBS COR 09-148 01-ID-28-001-2-A3	OBS CORR RM 09-148	UPS	C	VSL/WPL	0.5	20'	ACAMS CONFIRM	
AL 458H	154	N/A	MON ROOM 09-148 01-ID-28-001-2-A3	AIRLK "B" RM 14-165	UPS	B	VSL/WPL	0.5	35'	N/A	
AL 459H	156	116	OBS COR 09-121 01-ID-28-001-5-C4	TMA C AREA RM 12-117	UPS	C	VSL	0.5	50'	ACAMS CONFIRM	NOTE 22

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
AL 459V	475	528	OBS COR 09-121 01-ID-28-001-5-C4	TMA C AREA RM 12-117	UPS	C	VSL	0.5	50'	ACAMS CONFIRM	NOTE 17
AL 459G	365	409	OBS COR 09-121 01-ID-28-001-5-C4	TMA C AREA RM 12-117	UPS	C	VSL	0.5	50'	ACAMS CONFIRM	NOTE 17
MPF 460H	107	105	MON ROOM 09-148 01-ID-28-001-1-D3	MPF RM 14-149	UPS	B	VSL/WPL	0.5	35'	ACAMS CONFIRM	
MON 463H	101	167	MON ROOM 09-151 01-ID-28-001-1-C3	MON RM RM 09-151	UPS	C	VSL/WPL	0.5	40'	ACAMS CONFIRM	
MPF 465H	148	138	MON ROOM 09-151 01-ID-28-001-1-C3	DROP AREA RM 14-152	UPS	B	VSL/WPL	0.5	48'	ACAMS CONFIRM	ENTRY TO MPF ROOM
AL 468AH	288	360	MON ROOM 09-148 01-ID-28-001-2-A3	MPF DISCHG A/L DUCT RM 14-149	UPS	B	VSL	0.5	35'	ACAMS CONFIRM	
AL 468BH	366	407	MON ROOM 09-148 01-ID-28-001-2-A3	MPF DISCHG A/L DUCT RM 14-149	UPS	B	VSL	0.5	35'	ACAMS CONFIRM	NOTE 10
TMA 469H	324	N/A	MON ROOM 09-123 01-ID-28-001-5-D4	TMA BAGGED ITEMS RM 12-120	UPS	A	VSL	0.5	90'	N/A	
TMA 469V	468	N/A	MON ROOM 09-123 01-ID-28-001-5-D4	TMA BAGGED ITEMS RM 12-120	UPS	A	VSL	0.5	90'	N/A	NOTE 17
TMA 469G	334	N/A	MON ROOM 09-121 01-ID-28-001-5-C4	TMA BAGGED ITEMS RM 12-120	UPS	A	VSL	0.5	90'	N/A	NOTE 17
LSS 470H	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D3	STAIRWAY RM 35-166 LSS 1A	NOT REQUIRED	N/A	WPL	N/A	12'	PRIMARY	NOTE 12
AL 471H	165	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "A" RM 06-169	UPS	A	ECL/VSL	1.5/0.5	46'	N/A	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
AL 471V	367	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "A" RM 06-169	UPS	A	VSL	40	46'	N/A	NOTE 17
AL 471VS	367	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "B" RM 06-170	UPS	A	VSL	40	46'	N/A	NOTE 2 & 17
AL 472H	164	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "B" RM 06-170	UPS	B	VSL	0.5	40'	N/A	
OBS 473H	162	162	OBS COR 09-173 01-ID-28-001-6-C4	OBS COR RM 09-173	UPS	C	VSL/WPL	0.5	23'	ACAMS CONFIRM	
OBS 474H	168	168	OBS COR 09-173 01-ID-28-001-6-C4	OBS COR RM 06-171	UPS	C	VSL/WPL	0.5	40'	ACAMS CONFIRM	
AL 475H	386	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "A" RM 06-169	UPS	A	ECL	1.5	46'	N/A	
MPF 476H	N/A	565	OBS COR 09-148 01-ID-28-001-2-A3	MPF COOL DOWN AREA	UPS	D	WPL	N/A	45'	PRIMARY	NOTE 22
OBS 551H	110	117	OBS COR 09-115 01-ID-28-001-5-B3	OBS CORR RM 09-115	UPS	C	VSL/WPL	0.5	20'	ACAMS CONFIRM	
LSS 554H	N/A	PORTABLE	AIRLOCK 06-162 01-ID-28-001-1-B4	AIRLK A/B RM 13-154 LSS 6B	NOT REQUIRED	N/A	WPL	N/A	33'	PRIMARY	NOTE 12 & 17
LSS 554V	N/A	PORTABLE	AIRLOCK 06-162 01-ID-28-001-1-B4	AIRLK A/B RM 13-154 LSS 6B	NOT REQUIRED	N/A	WPL	N/A	33'	PRIMARY	NOTE 12 & 17
LSS 555H	N/A	PORTABLE	AIRLOCK 06-162 01-ID-28-001-1-B4	AIRLK A/B RM 06-163 LSS 6D	NOT REQUIRED	N/A	WPL	N/A	10'	PRIMARY	NOTE 12 & 17
LSS 558H	N/A	PORTABLE	AIRLOCK "C" 06-162 01-ID-28-001-1-B4	AIRLK "A/B" RM 13-154 LSS 6E	NOT REQUIRED	N/A	WPL	N/A	30'	PRIMARY	NOTE 12 & 17

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
LSS 558V	N/A	PORTABLE	AIRLOCK "C" 06-162 01-ID-28-001-1-B4	AIRLK "A/B" RM 13-154 LSS 6E	NOT REQUIRED	N/A	WPL	N/A	30'	PRIMARY	NOTE 12 & 17
MON 560H	138	158	MON ROOM 09-160 01-ID-28-001-1-A3	MON RM RM 09-160	UPS	C	VSL/WPL	0.5	37'	ACAMS CONFIRM	
LSS 561H	N/A	PORTABLE	OBS COR 09-115 01-ID-28-001-1-D4	MUN CORR RM 05-153 LSS 6A	NOT REQUIRED	N/A	WPL	N/A	21'	PRIMARY	NOTE 12 & 17
LIC 562H	227	227	MON ROOM 09-151 01-ID-28-001-1-C2	LIC 1 SEC RM 13-156	UPS	C	VSL/WPL	0.5	65'	ACAMS CONFIRM	
LIC 562HS	227	N/A	MON ROOM 09-151 01-ID-28-001-1-C2	LIC 1	UPS	N/A	VSL	0.5	100'	N/A	SAME ACAMS AS LIC 562H NOTE 2
LIC 563H	226	226	MON ROOM 09-160 01-ID-28-001-1-A2	LIC 2 SEC RM 13-157	UPS	C	VSL/WPL	0.5	50'	ACAMS CONFIRM	
LIC 563HS	226	N/A	MON ROOM 09-160 01-ID-28-001-1-A2	LIC 2	UPS	N/A	VSL	0.5	100'	N/A	ACAMS AS LIC 563H NOTE 2
LIC 564H	181	N/A	MON ROOM 09-151 01-ID-28-001-1-C3	LIC 1 PRI RM 13-155	UPS	A/B	ECL/VSL	1.5/0.5	55'	N/A	
LIC 565H	145	N/A	MON ROOM 09-160 01-ID-28-001-1-A3	LIC 2 PRI RM 13-158	UPS	A/B	ECL/VSL	1.5/0.5	56'	N/A	
AL 566H	124	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "A" RM 06-164	UPS	A	ECL/VSL	1.5/0.5	60'	N/A	
AL 566V	380	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "B" RM 06-163	UPS	A	VSL	40	60'	N/A	NOTE 17
AL 566 VS	380	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "A" RM 06-164	UPS	A	VSL	40	60'	N/A	NOTE 2 & 17

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
AL 567H	123	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "B" RM 06-163	UPS	B	VSL	0.5	70'	N/A	
DEC 568H	153	N/A	OBS COR 09-115 01-ID-28-001-5-A2	DECON RM RM 12-118	UPS	A	ECL/VSL	1.5/0.5	50'	N/A	
AL 569H	313	N/A	MON ROOM 09-160 01-ID-28-001-1-A3	AIRLK A/B RM 13-154	UPS	A/B	ECL/VSL	1.5/0.5	120'	N/A	
AL 569HS	313	N/A	MON ROOM 09-160 01-ID-28-001-1-A3	LIC 1 PRI, RM 13-155 OR LIC 2 PRI, RM 13-158 OR MUN CORR, RM 05-153	UPS	A/B	ECL/VSL	1.5/0.5	120'	N/A	SAME ACAMS AL 569H NOTE 2
AL 570H	314	361	MON ROOM 09-160 01-ID-28-001-1-A3	AIRLK "C" RM 06-162	UPS	C	VSL/WPL	0.5	60'	ACAMS CONFIRM	
AL 571H	436	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "A" RM 06-164	UPS	A	ECL	1.5	60'	N/A	
LSS 572H	N/A	PORTABLE	OBS COR 09-115 01-ID-28-001-1-D4	MUN CORR RM 05-153LSS 6I	NOT REQUIRED	N/A	WPL	N/A	21'	PRIMARY	NOTE 12
LSS 573H	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 34E	NOT REQUIRED	N/A	WPL	N/A	80'	PRIMARY	NOTE 12
LSS 573V	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 34D	NOT REQUIRED	N/A	WPL	N/A	80'	PRIMARY	NOTE 12 & 17
FIL 601AV	N/A	126	FILTER MON HOUSE 75 231 23-ID-28-004-1-C4	FILT EXH STACK	UPS	N/A	VSL	NA	75'	PRIMARY	
TMA 574H	480	N/A	OBS Corridor 09-121 01-ID-28-001-5-C4	TMA RM 12-120	UPS	A	ECL/VSL	1.5/0.5	90'	N/A	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
TMA 575H	481	N/A	OBS Corridor 09-121 01-ID-28-001-5-C4	TMA RM 12-120	UPS	A	ECL/VSL	1.5/0.5	50'	N/A	
TMA 576 H, V, G	N/A	636	OBS Corridor 09-121 01-ID-28-001-5-C4	RUBBER GOODS MONITOING TMA C AREA RM 12-117	UPS	C	WPL	N/A	60'	HIST	WPL MONITORING FOR AGENT OF INTEREST ; ITEMS GOING TO LAUNDRY NOTE 17
FIL 601BV	N/A	473	FILTER MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH STACK	UPS	N/A	VSL	NA	75'	PRIMARY	STAND-BY FOR FIL 601 AV
FIL 601CH	335	364	FILTER MON HOUSE 75-231 23-ID-28-004-1-C3	FILT EXH STACK	UPS	N/A	VSL	0.5	100'	ACAMS CONFIRM	
FIL 601DH	359	536	FILTER MON HOUSE 75-231 23-ID-28-004-1-C3	FILT EXH STACK	UPS	N/A	VSL	0.5	100'	ACAMS CONFIRM	STAND-BY FOR FIL 601CH
FIL 601EG	N/A	589	NEXT TO MONITOR HOUSE 75-131	FILT EXH STACK	UPS	N/A	VSL	0.5	70'	PRIMARY	
FIL 601FG	N/A	590	NEXT TO MONITOR HOUSE 75-131	FILT EXH STACK	UPS	N/A	VSL	0.5	70'	PRIMARY	STAND-BY FOR FIL 601EG
FIL 612H	190	609	FIL MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 109 SECOND MIDBED	UPS	N/A	VSL	0.5	46'	ACAMS CONFIRM	NOTE 1
FIL 613H	190	254	FIL MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 109 THIRD MIDBED	UPS	N/A	VSL	0.5	55'	ACAMS CONFIRM	NOTE 1 & 19
FIL 619H	190	305	FILTER EXH 109 75-231 23-ID-28-004-1-C4	FILTER EXH 109 DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM PRIMARY	NOTE 1
FIL 622H	189	610	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 108 SECOND MIDBED	UPS	N/A	VSL	0.5	26'	ACAMS CONFIRM	NOTE 1

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
FIL 623H	189	257	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 108 THIRD MIDBED	UPS	N/A	VSL	0.5	35'	ACAMS CONFIRM	NOTE 1
FIL 629H	189	306	FIL EXH 108 75-23123-ID-28-004-1-C-4	FILT EXH DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTE 1 & 21
FIL 632H	188	611	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 107 SECOND MIDBED	UPS	N/A	VSL	0.5	45'	ACAMS CONFIRM	
FIL 633H	188	251	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 107 THIRD MIDBED	UPS	N/A	VSL	0.5	45'	ACAMS CONFIRM	NOTE 1
FIL 639H	188	307	FILTER EXH 107 75-231 23-ID-28-004-1-C4	FILTER EXH 107 DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM	NOTE 1 & 21
FIL 642H	161	612	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 106 SECOND MIDBED	UPS	N/A	VSL	0.5	60'	ACAMS CONFIRM	NOTE 1
FIL 643H	161	236	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 106 THIRD MIDBED	UPS	N/A	VSL	0.5	46'	ACAMS CONFIRM	NOTE 1
FIL 649H	161	308	FILTER EXH 106 75-232 23-ID-28-004-1-C3	FILTER EXH 106 DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTE 1
FIL 652H	186	613	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 105 SECOND MIDBED	UPS	N/A	VSL	0.5	26'	ACAMS CONFIRM	NOTE 1
FIL 653H	186	239	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 105 THIRD MIDBED	UPS	N/A	VSL	0.5	35'	ACAMS CONFIRM	NOTE 1



STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
FIL 659H	186	309	FILTER EXH 105 75-232 23-ID-28-004-1-C3	FILTER EXH 105 DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM/P RIMARY	NOTE 1
FIL 662H	187	614	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 104 SECOND MIDBED	UPS	N/A	VSL	0.5	36'	ACAMS CONFIRM	NOTE 1
FIL 663 H	187	260	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 104 THIRD MIDBED	UPS	N/A	VSL	0.5	45'	ACAMS CONFIRM	NOTE 1
FIL 669H	187	310	FILTER EXH 104 75-232 23-ID-28-004-1-C2	FILTER EXH 104 DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM PRIMARY	NOTE 1
FIL 672H	142	615	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 103 SECOND MIDBED	UPS	N/A	VSL	0.5	60'	ACAMS CONFIRM	NOTE 1
FIL 673H	142	242	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 103 THIRD MIDBED	UPS	N/A	VSL	0.5	55'	ACAMS CONFIRM	NOTE 1
FIL 679H	142	311	FILTER EXH 103 75-233 23-ID-28-004-1-C2	FILTER EXH 103 DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM PRIMARY	NOTE 1
FIL 682H	132	616	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 102 SECOND MIDBED	UPS	N/A	VSL	0.5	26'	ACAMS CONFIRM	NOTE 1
FIL 683H	132	245	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 102 THIRD MIDBED	UPS	N/A	VSL	0.5	35'	ACAMS CONFIRM	NOTE 1
FIL 689H	132	312	FILTER EXH 102 75-233 23-ID-28-004-1-C1	FILTER EXH 102 DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM PRIMARY	NOTE 1

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
FIL 692H	109	617	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 101 SECOND MIDBED	UPS	N/A	VSL	0.5	36'	ACAMS CONFIRM	NOTE 1
FIL 693H	109	248	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 101 THIRD MIDBED	UPS	N/A	VSL	0.5	45'	ACAMS CONFIRM	NOTE 1
FIL 699H	109	313	FILTER EXH 101 75-233 23-ID-28-004-1-C1	FILTER EXH 101 DOOR ENCLOSURE	UPS	N/A	VSL	0.5	39'	ACAMS CONFIRM PRIMARY	NOTE 1
PAS 701AG	129	N/A	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	20'	N/A	ALTERNATING CYCLES W/701B OR 701C (NOTE 17)
PAS 701BG	225	N/A	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	20'	N/A	ALTERNATING CYCLES W/701A OR 701C (NOTE 17)
PAS 701CG	223	N/A	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	20'	N/A	STAND-BY FOR 701A AND 701B NOTE 17
PAS 701DG	N/A	129	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	SEL	N/A	18'	ACAMS CONFIRM	NOTE 17
PAS 701EG	N/A	314	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	SEL	N/A	18'	BACKUP ACAMS CONFIRM	NOTE 4 & 17
PAS 702AH	183	315	MON HOUSE 75-263 06-ID-28-003-1-C1	DFS DUCT	UPS	N/A	SEL	0.2	75'	ACAMS CONFIRM	
PAS 702BH	354	557	MON HOUSE 75-263 06-ID-28-003-1-C1	DFS DUCT	UPS	N/A	SEL	0.2	75'	ACAMS CONFIRM	STAND-BY FOR PAS 702AH
PAS 703AH	167	316	MON HOUSE 75-263 06-ID-28-003-1-C1	MPF DUCT	UPS	N/A	SEL	0.2	60'	ACAMS CONFIRM	
PAS 703BH	355	559	MON HOUSE 75-263 06-ID-28-003-1-C1	MPF DUCT	UPS	N/A	SEL	0.2	60'	ACAMS CONFIRM	STAND-BY FOR 703AH

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
PAS 703CG OR V	348	372	MON HOUSE 75-263 06-ID-28-003-1-C1	MPF DUCT	UPS	N/A	SEL	G = 0.2 V=0.5	60'	ACAMS CONFIRM	NOTE 17 MAY BE SET UP FOR EITHER FOR G OR V
PAS 703DG OR V	349	558	MON HOUSE 75-263 06-ID-28-003-1-C1	MPF DUCT	UPS	N/A	SEL	G = 0.2 V=0.5	60'	ACAMS CONFIRM	STAND-BY FOR PAS 703CG OR V NOTE 17
PAS 704AH	163	229	MON HOUSE 75-263 06-ID-28-003-1-C1	LIC 1 DUCT	UPS	N/A	SEL	0.2	50'	ACAMS CONFIRM	
PAS 704BH	356	373	MON HOUSE 75-263 06-ID-28-003-1-C1	LIC 1 DUCT	UPS	N/A	SEL	0.2	50'	ACAMS CONFIRM	STAND-BY FOR PAS 704AH
PAS 705AH	134	228	MON HOUSE 75-263 06-ID-28-003-1-C1	LIC 2 DUCT	UPS	N/A	SEL	0.2	50'	ACAMS CONFIRM	
PAS 705BH	357	374	MON HOUSE 75-263 06-ID-28-003-1-C1	LIC 2 DUCT	UPS	N/A	SEL	0.2	50'	ACAMS CONFIRM	STAND-BY FOR PAS 705AH
PAS 706AV	331	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	20'	N/A	ALTERNATING CYCLES w/706B or 706C (NOTE 17)
PAS 706BV	332	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	16'	N/A	ALTERNATING CYCLES w/706A or 706C (NOTE 17)
PAS 706CV	333	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	14'	N/A	STANDBY FOR 706A AND 706B NOTE 17
PAS 706DV	N/A	362	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	N/A	16'	ACAMS CONFIRM	NOTE 17
PAS 706EV	N/A	363	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	N/A	16'	ACAMS CONFIRM	NOTE 4 & 17
PAS 707AH	432	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	35'	N/A	ALTERNATING CYCLES w/707B or 707C

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
PAS 707BH	433	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	35'	N/A	ALTERNATING CYCLES w/707A or 707C
PAS 707CH	434	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	0.2	35'	N/A	STANDBY FOR 707A AND 707B
PAS 707DH	N/A	577	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	N/A	23'	ACAMS CONFIRM	
PAS 707EH	N/A	578	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	SEL	N/A	23'	ACAMS CONFIRM	NOTES 4 & 6
MED 904 H	399	453	MEDICAL ROOM 102-136 14-ID-28-008-1-C4	MEDICAL RM 102-136	UPS	C	VSL	0.5	10'	ACAMS CONFIRM	NOTE 9
MED 904V	261	377	MEDICAL ROOM 102-136 14-ID-28-008-1-C4	MEDICAL RM 102-136	UPS	C	VSL	0.5	10'	ACAMS CONFIRM	NOTE 9 & 17
MED 904G	341	376	MEDICAL ROOM 102-136 14-ID-28-008-1-C4	MEDICAL RM 102-136	UPS	C	VSL	0.5	10'	ACAMS CONFIRM	NOTE 9 & 17
PMB 906H	263	263	COTTON GOODS STORAGE AREA 14-ID-28-008-1-B4	COTTON GOODS STORAGE AREA	UPS	D	VSL/WPL	0.5	15'	ACAMS CONFIRM	NOTE 3 ITEMS GOING TO LAUNDRY
PMB 906V	370	408	COTTON GOODS STORAGE AREA 14-ID-28-008-1-B4	COTTON GOODS STORAGE AREA	UPS	D	VSL/WPL	0.5	15'	ACAMS CONFIRM	NOTE 3 ITEMS GOING TO LAUNDRY NOTE 17
WHS 912H	N/A	370	ENTRY WAY EAST END OF S2 35-ID-28-021-C2	S2 EXHAUST DUCT	UPS	D	WPL	N/A	7'	PRIMARY	NOTE 22
WHS 912V	N/A	320	ENTRY WAY EAST END OF S2 35-ID-28-021-C2	S2 EXHAUST DUCT	UPS	D	WPL	N/A	7'	PRIMARY	NOTE 22

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
PMB 917 H, G, V	N/A	PORTABLE	COTTON GOODS STORAGE AREA 14-ID-28-008-1-B4	COTTON GOODS MONITORING	SPS	D	WPL	N/A	10'	HIST	WPL MONITORING FOR AGENT OF INTEREST ITEMS GOING TO LAUNDRY NOTE 17
MSB 950H	N/A	443	INSIDE MSB 12-ID-28-006-1-C3	MSB ACAMS REPAIR AREA	SPS	D	WPL	N/A	2'	PRIMARY	DRINKING ALLOWED NOTE 22
MSB 950G	N/A	182	INSIDE MSB 12-ID-28-006-1-C3	MSB ACAMS REPAIR AREA	SPS	D	WPL	N/A	2'	PRIMARY	DRINKING ALLOWED NOTE 22
MSB 950V	N/A	365	INSIDE MSB 12-ID-28-006-1-C3	MSB ACAMS REPAIR AREA	SPS	D	WPL	N/A	2'	PRIMARY	DRINKING ALLOWED NOTE 22
CAL 951H	393	444	MONITORING HOUSE 44-ID-28-020-1	FILTER EXHAUST STACK	UPS	N/A	VSL	0.5	65'	ACAMS CONFIRM	NOTE 15 NO PDARS
CAL 951V	277	277	MONITORING HOUSE 44-ID-28-020-1	FILTER EXHAUST STACK	UPS	N/A	VSL	0.5	65'	ACAMS CONFIRM	NOTE 15 NO PDARS
CAL 951G	340	367	MONITORING HOUSE 44-ID-28-020-1	FILTER EXHAUST STACK	UPS	N/A	VSL	0.5	65'	ACAMS CONFIRM	NOTE 15 NO PDARS
CAL 952H	N/A	445	MONITORING HOUSE 44-ID-28-020-1	FILTER 13 MIDBED FILT-101	UPS	N/A	VSL	N/A	50'	PRIMARY	
CAL 952G	N/A	436	MONITORING HOUSE 44-ID-28-020-1	FILTER 13 MIDBED FILT-101	UPS	N/A	VSL	N/A	50'	PRIMARY	
CAL 952V	N/A	278	MONITORING HOUSE 44-ID-28-020-1	FILTER 13 MIDBED FILT-101	UPS	N/A	VSL	N/A	50'	PRIMARY	
CAL 953H	N/A	446	MONITORING HOUSE 44-ID-28-020-1	FILTER 8 MIDBED FILT-102	UPS	N/A	VSL	N/A	50'	PRIMARY	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
CAL 953G	N/A	437	MONITORING HOUSE 44-ID-28-020-1	FILTER 8 MIDBED FILT-102	UPS	N/A	VSL	N/A	50'	PRIMARY	
CAL 953V	N/A	280	MONITORING HOUSE 44-ID-28-020-1	FILTER 8 MIDBED FILT-102	UPS	N/A	VSL	N/A	50'	PRIMARY	
CAL 954H	N/A	447	MONITORING HOUSE 44-ID-28-020-1	FILTER 8 MIDBED FILT-103	UPS	N/A	VSL	N/A	23'	PRIMARY	
CAL 954G	N/A	438	MONITORING HOUSE 44-ID-28-020-1	FILTER 5 MIDBED FILT-103	UPS	N/A	VSL	N/A	23'	PRIMARY	
CAL 954V	N/A	279	MONITORING HOUSE 44-ID-28-020-1	FILTER 5 MIDBED FILT-103	UPS	N/A	VSL	N/A	23'	PRIMARY	
CAL 974H	267	267	CORR-117 44-ID-28-020-1	DAAMS LAB RM 119	UPS	D	VSL/WPL	0.5	35'	ACAMS CONFIRM	NO PDARS
CAL 974V	N/A	454	CORR-117 44-ID-28-020-1	DAAMS LAB RM 119	UPS	D	WPL	N/A	35'	PRIMARY	NOTE 17 & 22
CAL 980H	395	450	COR-117 44-ID-28-020-1	GC/MS #2 RM 115	UPS	D	VSL/WPL	0.5	25'	ACAMS CONFIRM	NO PDARS
CAL 980G	N/A	455	CORR-117 44-ID-28-020-1	GC/MS #2 RM 115	UPS	D	WPL	N/A	25'	PRIMARY	NOTE 17 AND 22
CAL 980V	345	369	CORR-117 44-ID-28-020-1	GC/MS #2 RM 115	UPS	D	VSL/WPL	0.5	25'	ACAMS CONFIRM	NO PDARS
CAL 981G	271	271	CORR-117 44-ID-28-020-1	TOX LAB RM 114	UPS	C	VSL/WPL	0.2	40' ACAMS	ACAMS CONFIRM	NOTE 17 NO PDARS
CAL 982V	320	272	CORR-117 44-ID-28-20-1	TOX LAB RM 114	UPS	C	VSL/WPL	0.5	20'	ACAMS CONFIRM	NO PDARS
CAL 983H	396	451	COR-117 44-ID-28-020-1	TOX LAB RM 114	UPS	C	VSL/WPL	0.5	20'	ACAMS CONFIRM	NOTE 22 NO PDARS
CAL 984G	274	274	COR-117 44-ID-28-020-1	CAL RM 113	UPS	C	VSL/WPL	0.2	35'	ACAMS CONFIRM	NOTE 17 NO PDARS
CAL 985V	319	275	COR-117 44-ID-28-020-1	CAL ROOM 113	UPS	C	VSL/WPL	0.5	15'	ACAMS CONFIRM	NO PDARS
CAL 986H	397	452	COR-117 44-ID-28-020-1	CAL RM 113	UPS	C	VSL/WPL	0.5	35'	ACAMS CONFIRM	NOTE 22 NO PDARS

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
CAL 987GS	309	N/A	COR 117 44-ID-28-020-1	COR 117 SPOOL	UPS	N/A	VSL	0.2	100'	N/A	NOTE 5, 9, AND 17 NO PDARS
CAL 988VS	318	N/A	COR 117 44-ID-28-020-1	COR 117 SPOOL	UPS	N/A	VSL	0.5	100'	N/A	NOTE 5, 9, AND 17 NO PDARS
CAL 989 HS	398	N/A	COR 44-ID-28-020-1	COR 117 SPOOL	UPS	N/A	VSL	0.5	100'	N/A	NOTE 5 AND 9 NO PDARS

## AGENT MONITORING PLAN NOTES

1. See Paragraph 22.8 for filter monitoring protocol.
2. This station consists of a sample line that may temporarily be connected to a nearby ACAMS (as directed by the CON, to monitor any location within the range of the spool).
3. PMB 906 and PMB 911 use the same ACAMS. The ACAMS normally monitors the PMB 906 location but upon request, the ACAMS and DAAMS can be switched to monitor PMB 911.
4. Used as a backup to the primary PAS (701, 706, 707) DAAMS when tubes are being pulled or maintenance is being performed on primary DAAMS.
5. This ACAMS is not in use at all times. It is for special purposes only. When it is not in use it will have a carbon filter at the ACAMS, with the sample line disconnected.
6. Reserved
7. CYC 258H and CYC 260H use the same ACAMS/DAAMS equipment. They usually monitor station CYC 260H but on request the sample line can be switched to monitor CYC 258H.
8. Reserved
9. These ACAMS and DAAMS can be switched to monitor three different locations.
10. The ACAMS and DAAMS (confirmation) at the MPF Discharge Airlock (AL 468) samples filtered air except when monitoring the discharge airlock.
11. Reserved
12. All LSS air DAAMS locations need to be sampled for agents inside the facility. The reporting level is 0.5 WPL.
13. Reserved
14. This ACAMS sample line has a valve allowing it to monitor in three different locations. The sample custody enclosure area, the airlock to the sample enclosure area, and to sniff gloves in the glove box. This is an ACAMS only station.
15. This ACAMS is located outside the CAL in a monitoring building. A remote alarm and malfunction light is in the CAL to alert personnel if the ACAMS alarms or goes into malfunction.
16. Reserved
17. These stations are required in process, downstream and adjacent areas when contaminated material is present from a past agent campaign. These stations are required when the agent waste enters the facility boundaries per condition 22.16.6.1.
18. DAAMS shall be collected on this station immediately following any ACAMS alarm.
19. The fourth mid-bed VX DAAMS or 3<sup>rd</sup> midbed GB DAAMS must be pulled and analyzed when FIL 601 ACAMS alarms. WPL samples must be collected on a daily basis for these stations.
20. Reserved
21. Access to these areas is limited and controlled. Due to this condition, V/G pads will be changed every 28 days or upon entry.
22. WPL samples must be collected and analyzed on a daily basis at this station.



**Hazard Level:**

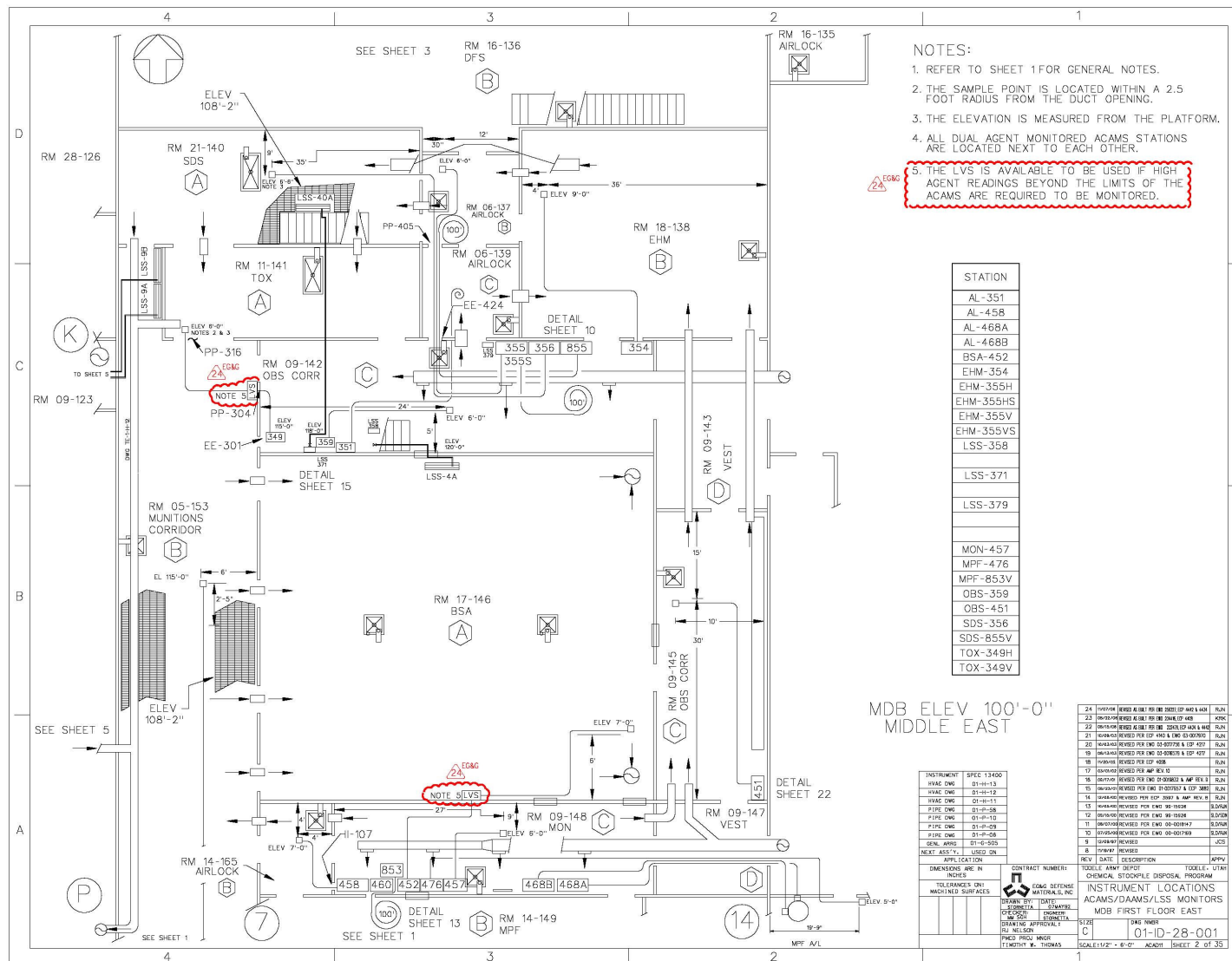
STEL	Short Term Exposure Limit
SEL	Source Emission Limit.
WPL	Worker Population Limit
ECL	Engineering Control Level
IDLH	Immediately Dangerous to Life and Health
VSL	Vapor Screening Limit

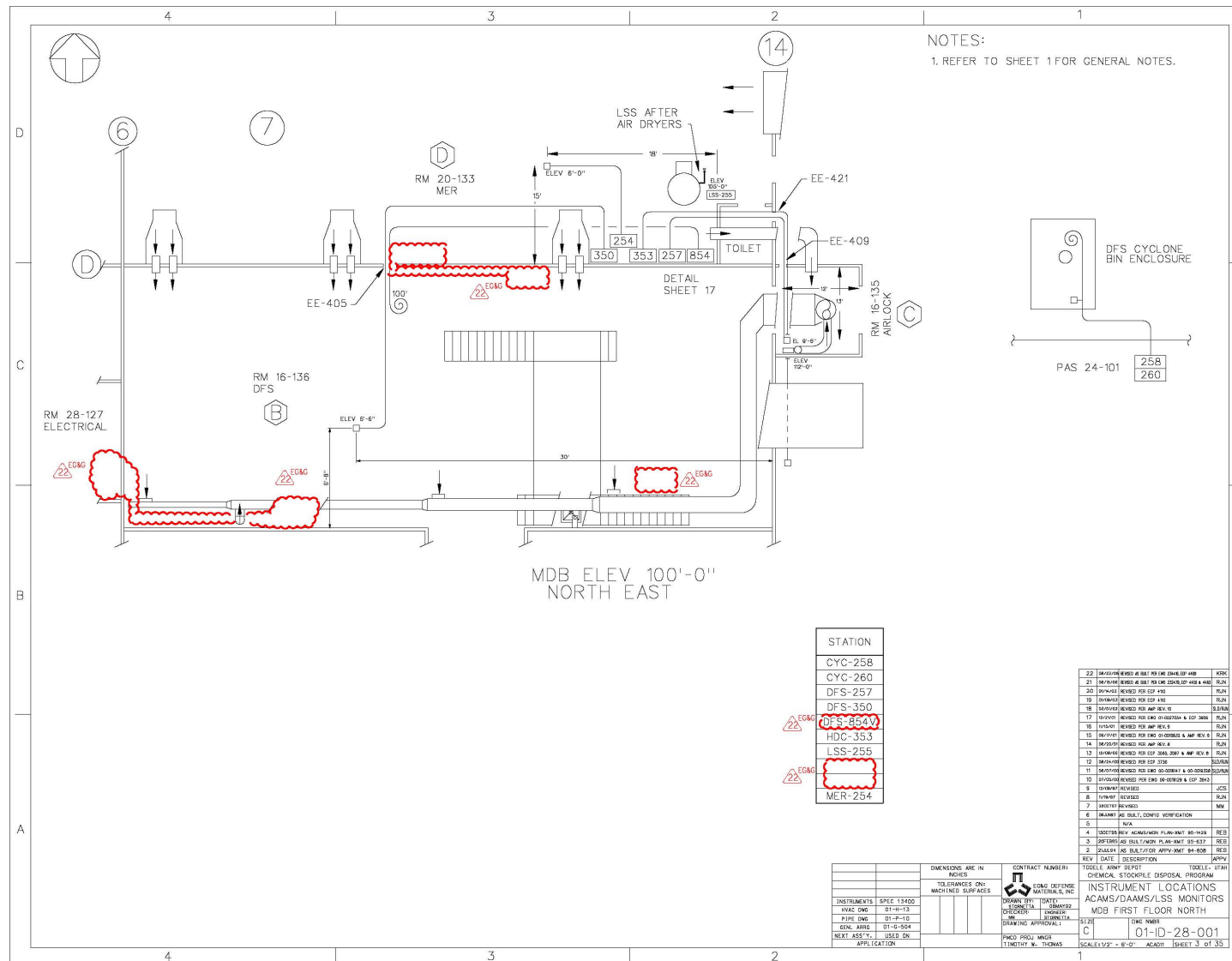
See AR 385-61 for a complete definition of the Hazard Level designations

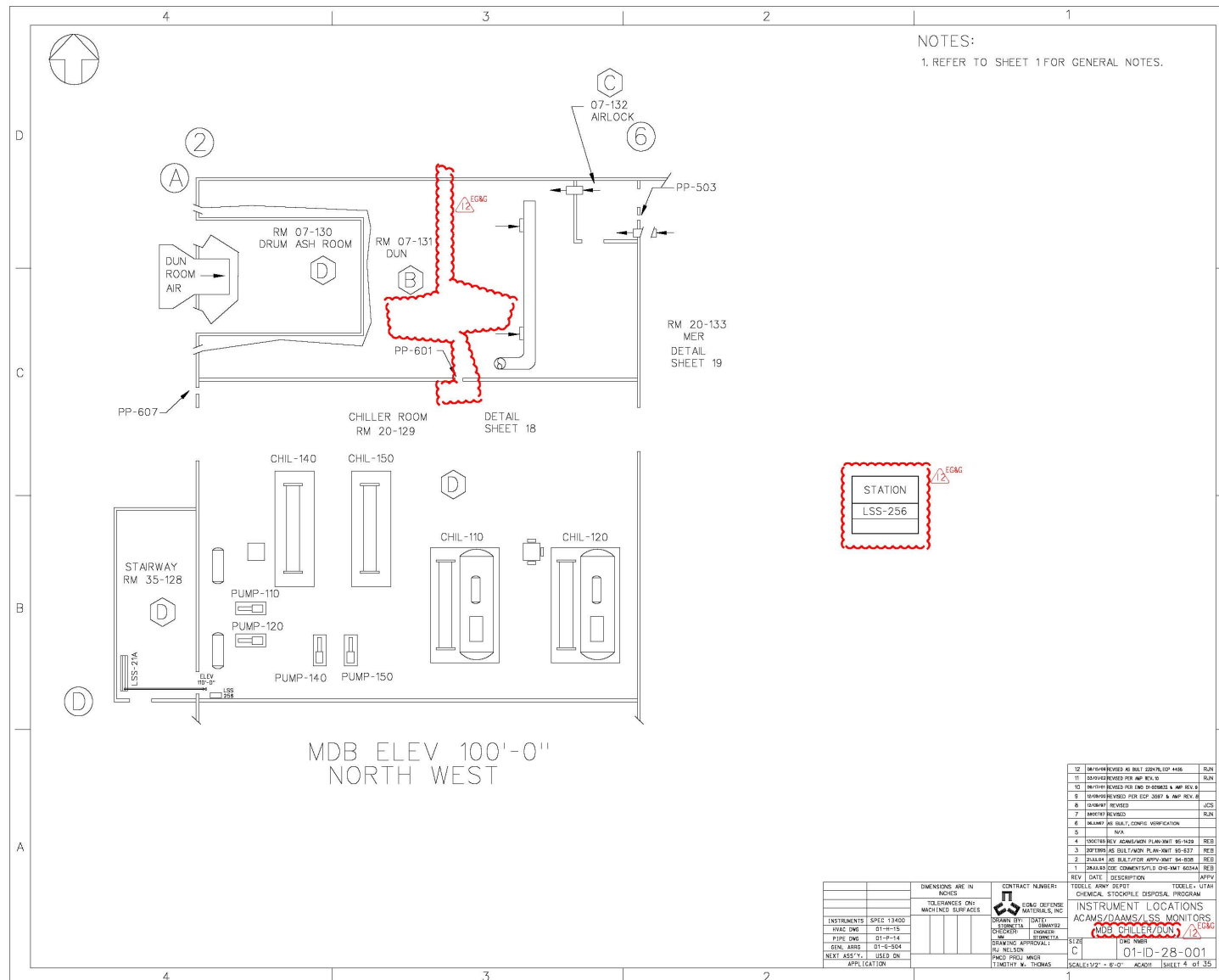
## **APPENDIX B**

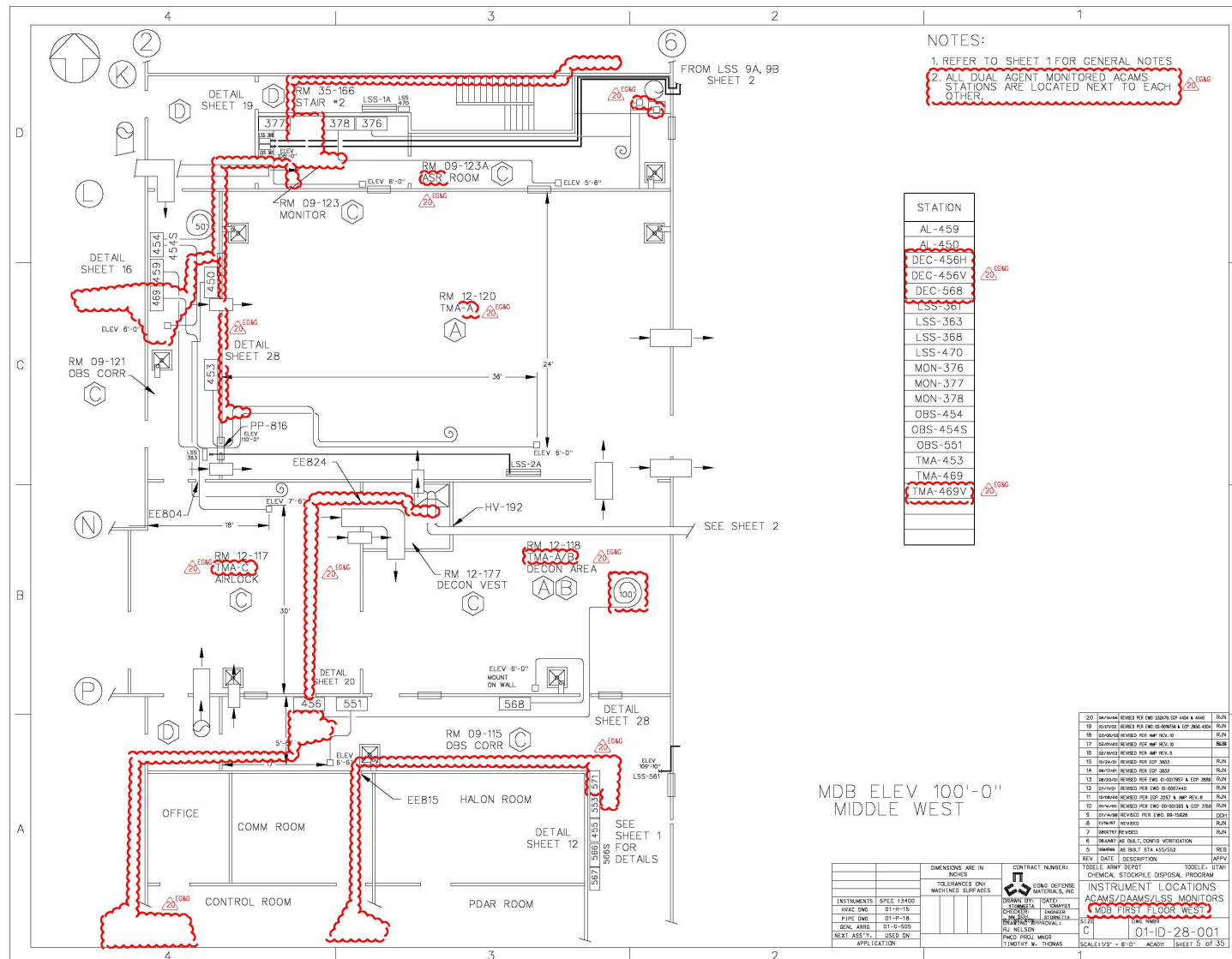
### **DRAWINGS OF AIR MONITORING LOCATIONS**







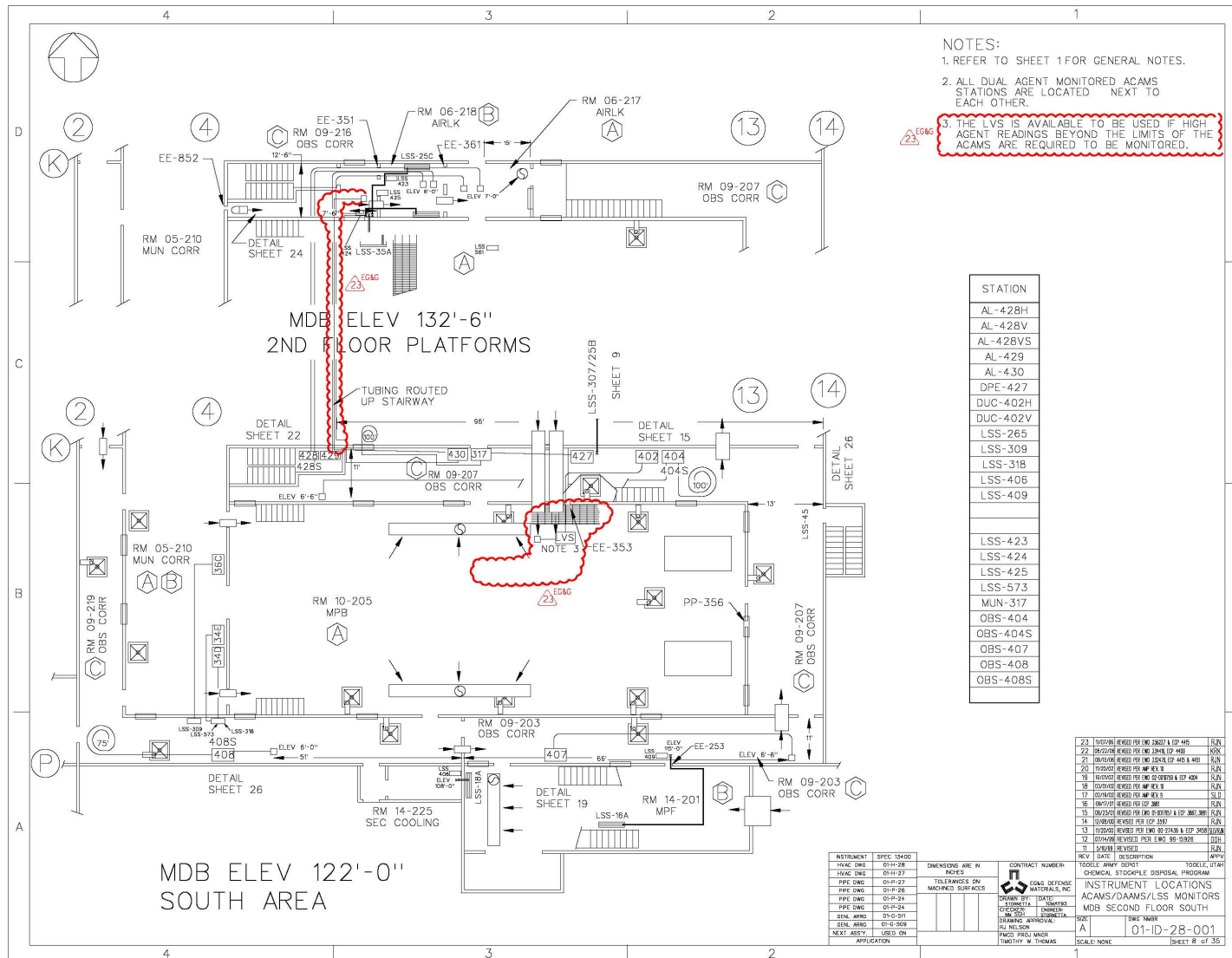


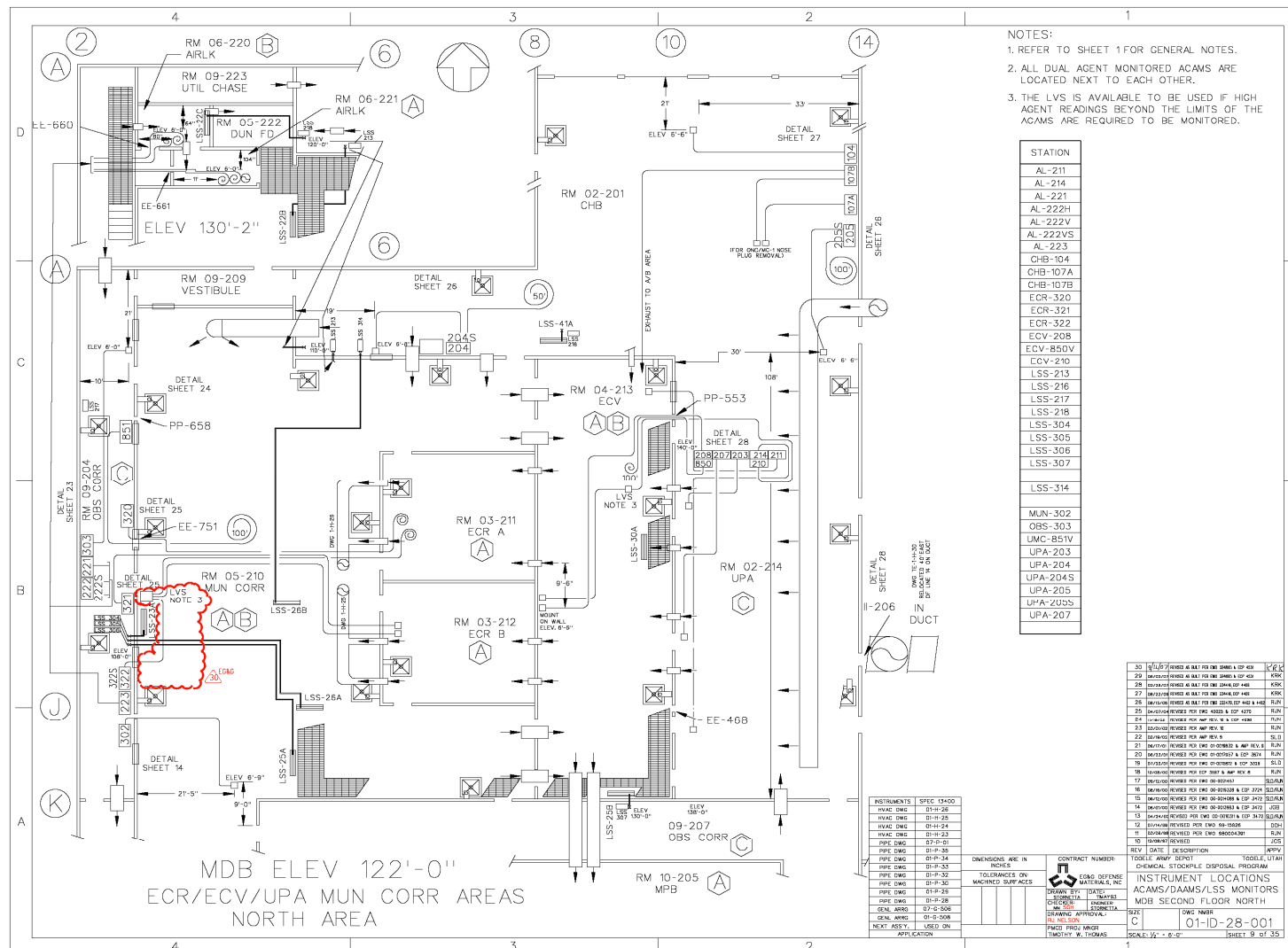


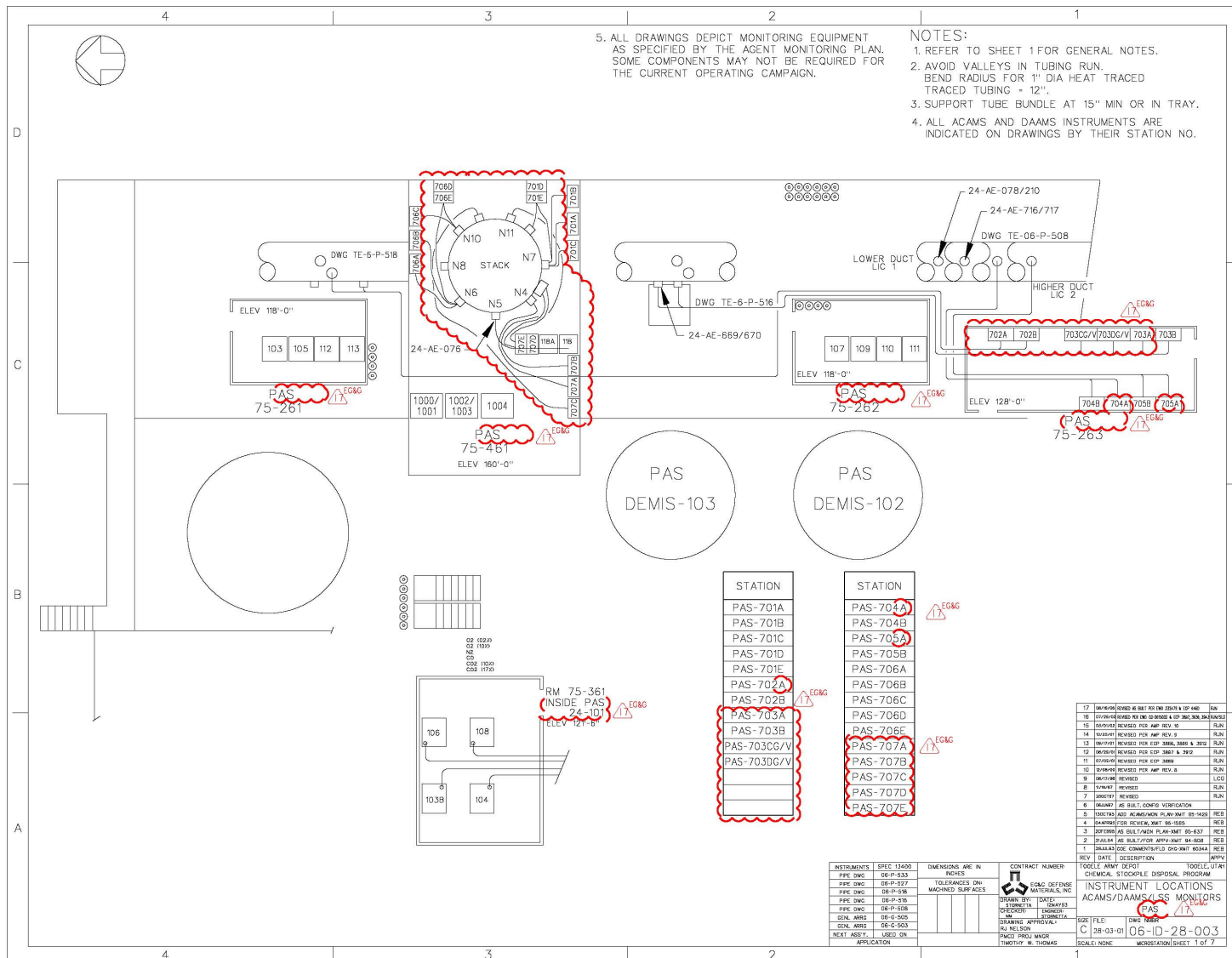


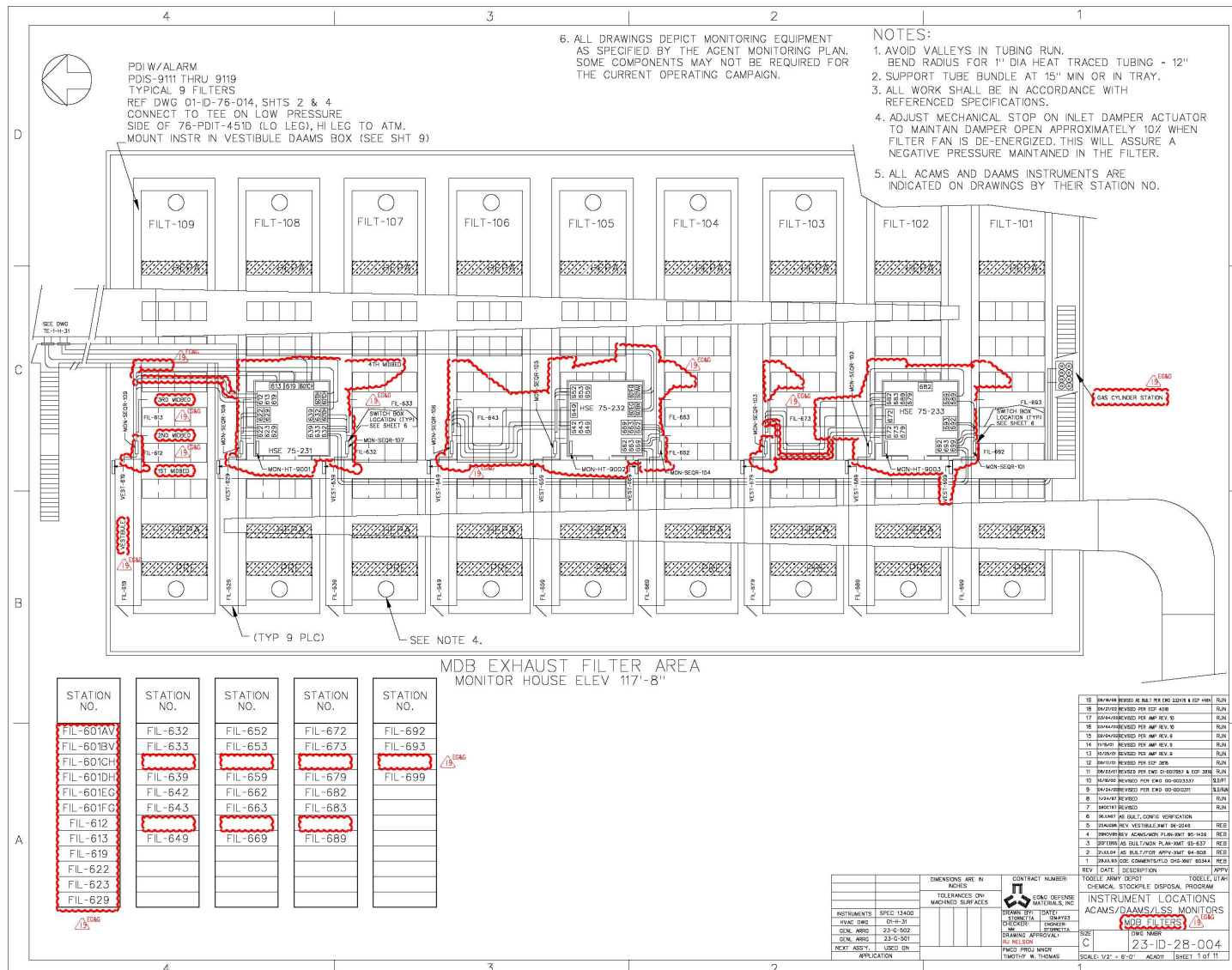










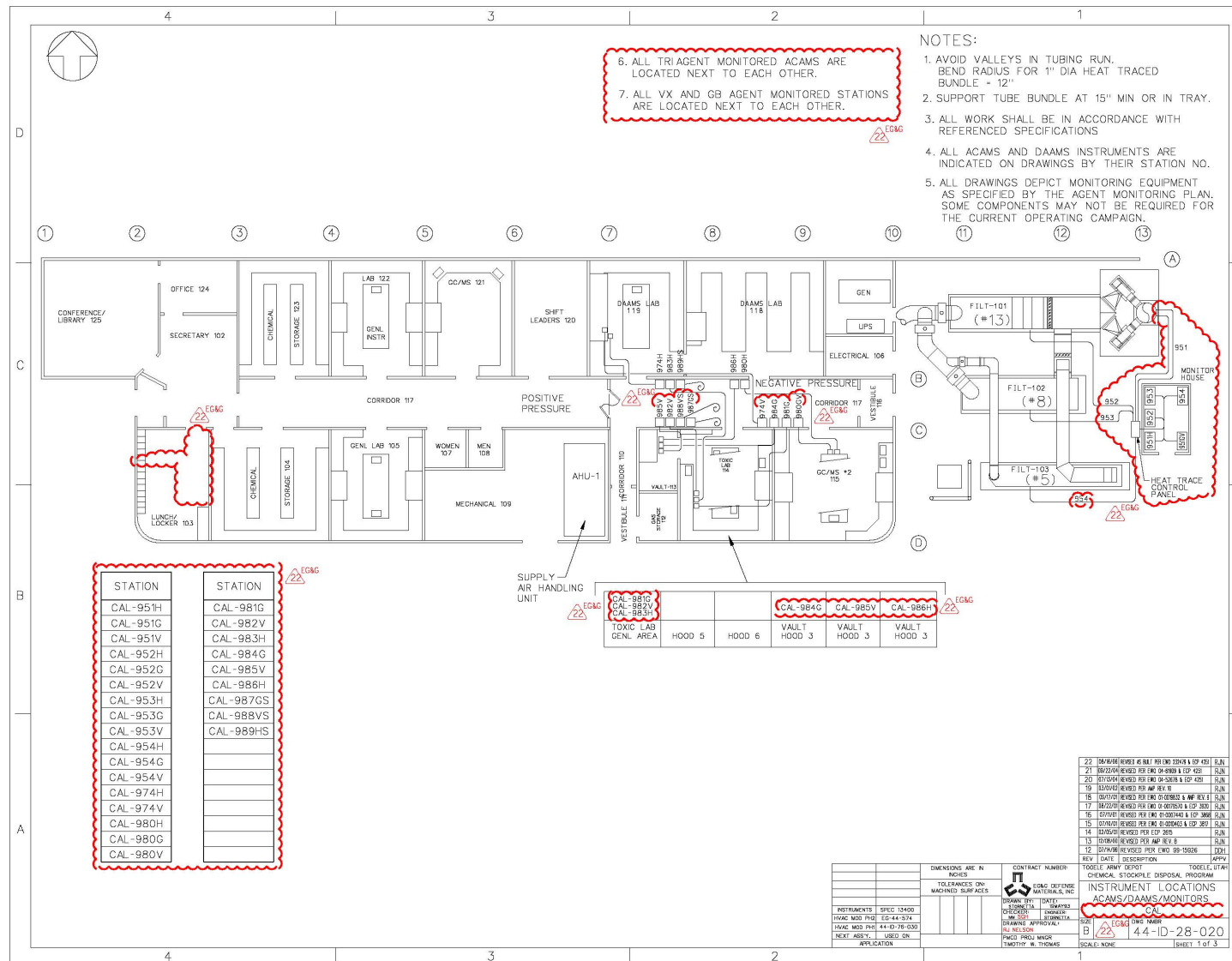


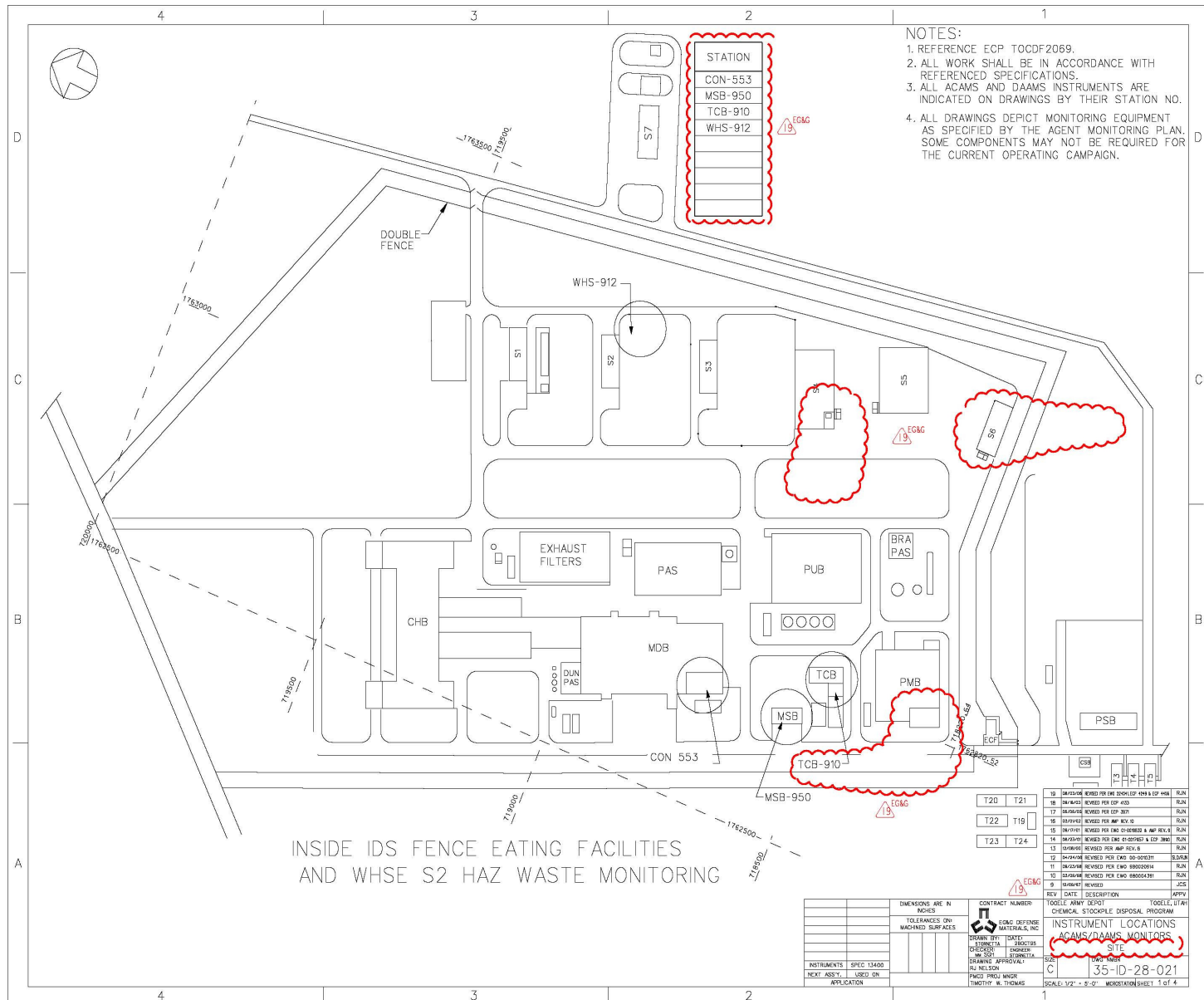






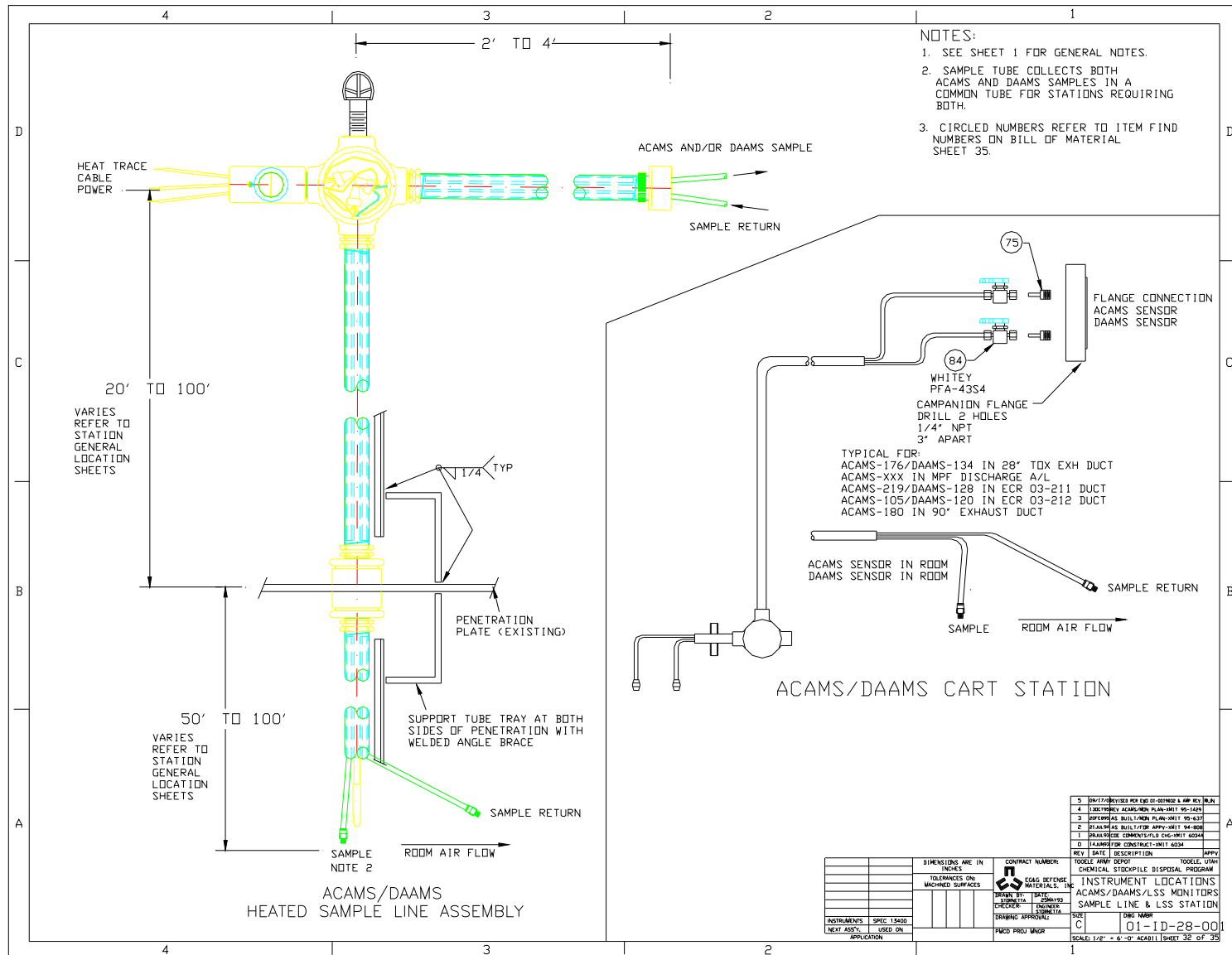






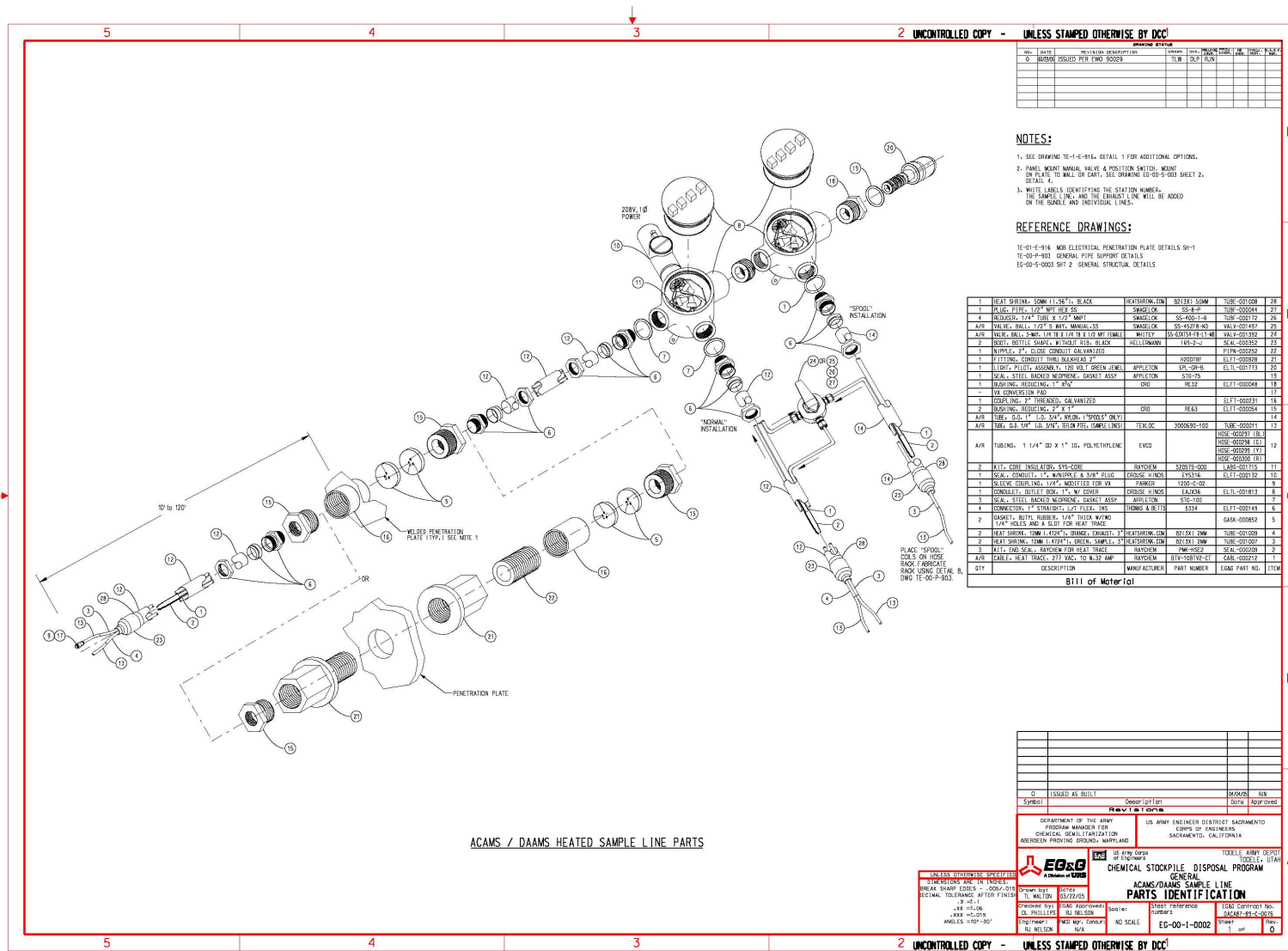
## **APPENDIX C**

### **HEATED SAMPLE LINE ASSEMBLY DRAWING**



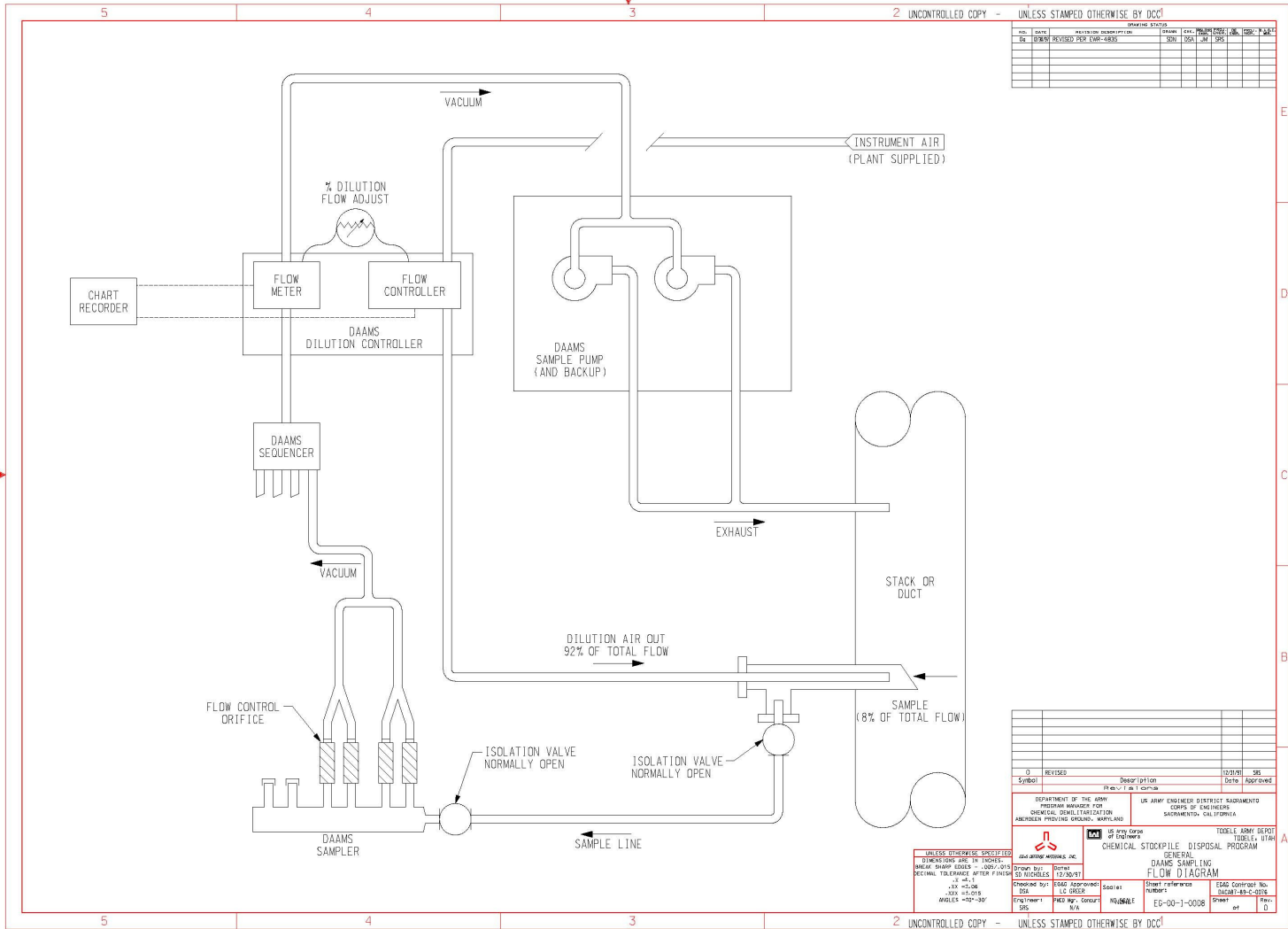
## **APPENDIX D**

### **HEATED SAMPLE LINE PARTS DRAWING**



## **APPENDIX E**

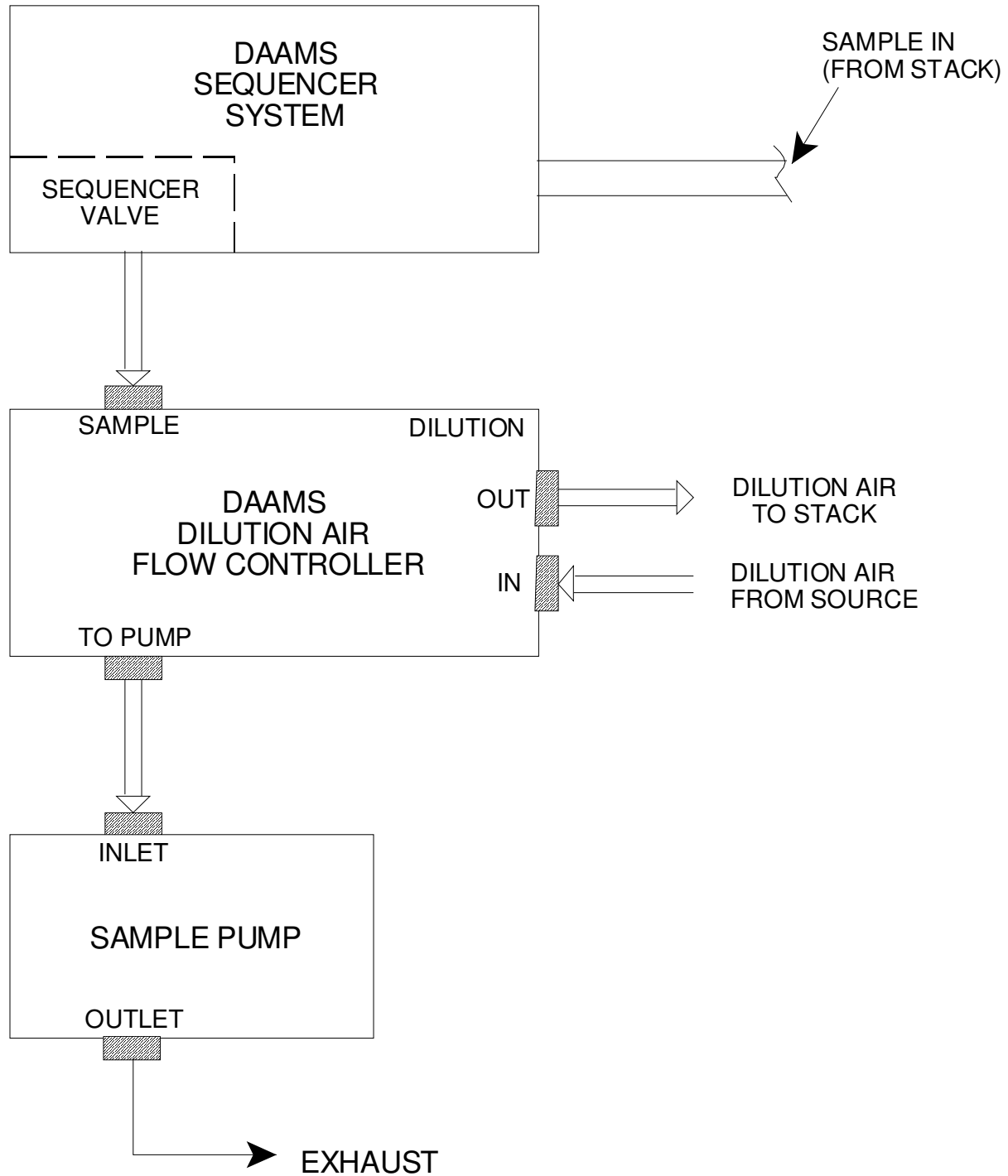
### **DAAMS DILUTION AIR FLOW CONTROLLERS**





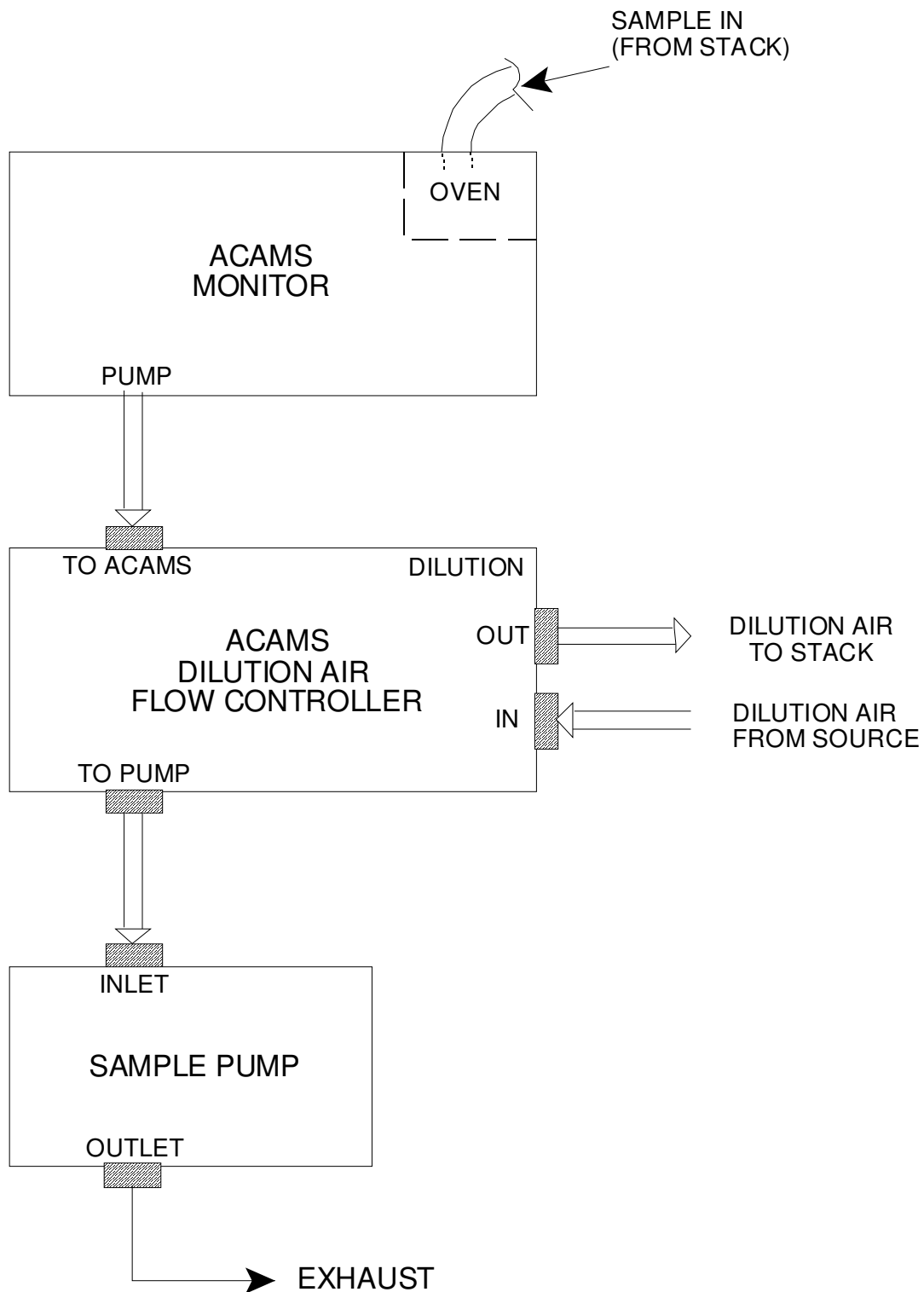
## **APPENDIX F**

### **DAAMS STACK SAMPLING ASSEMBLY**



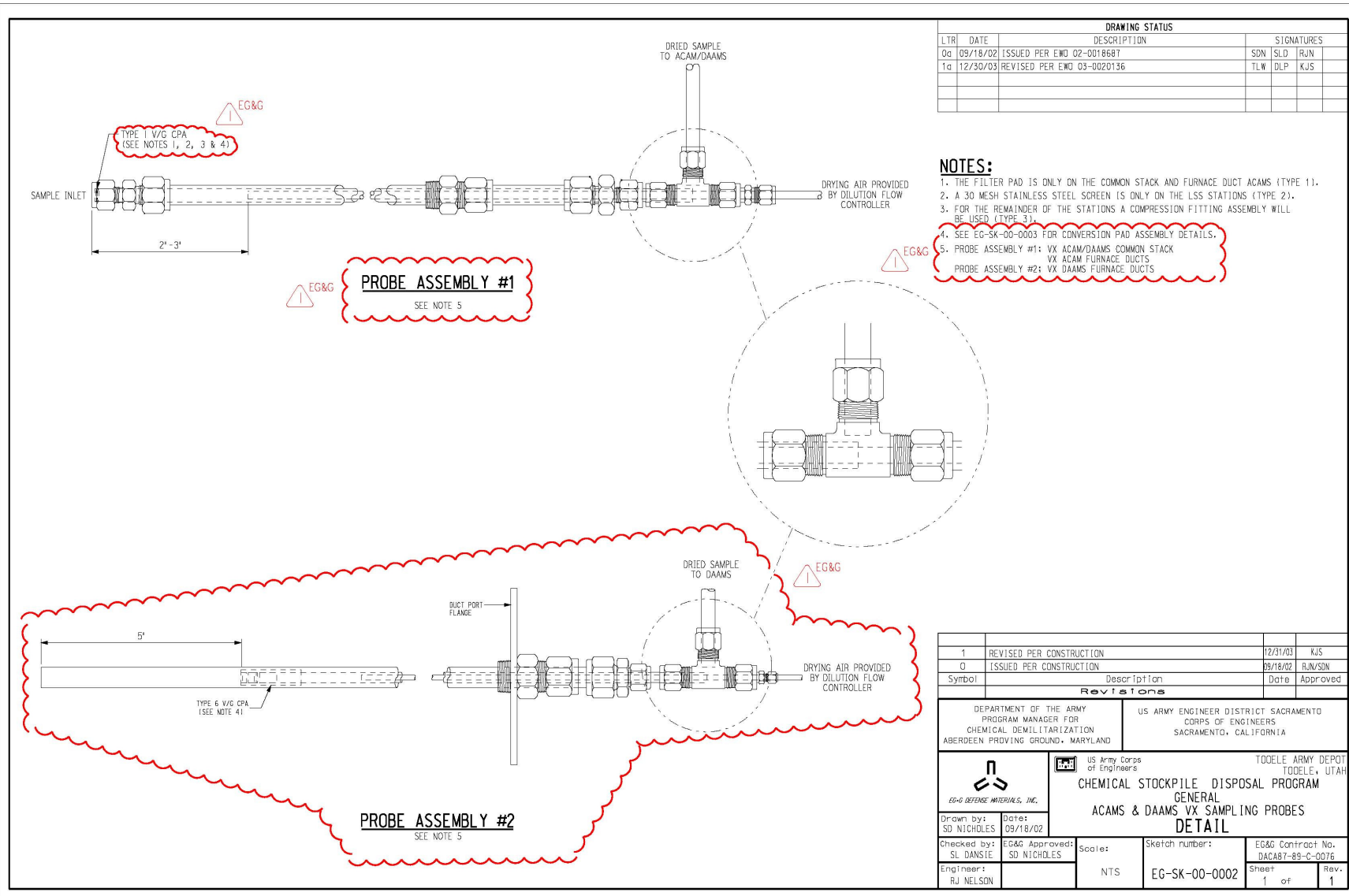
## **APPENDIX G**

### **ACAMS STACK SAMPLING ASSEMBLY**



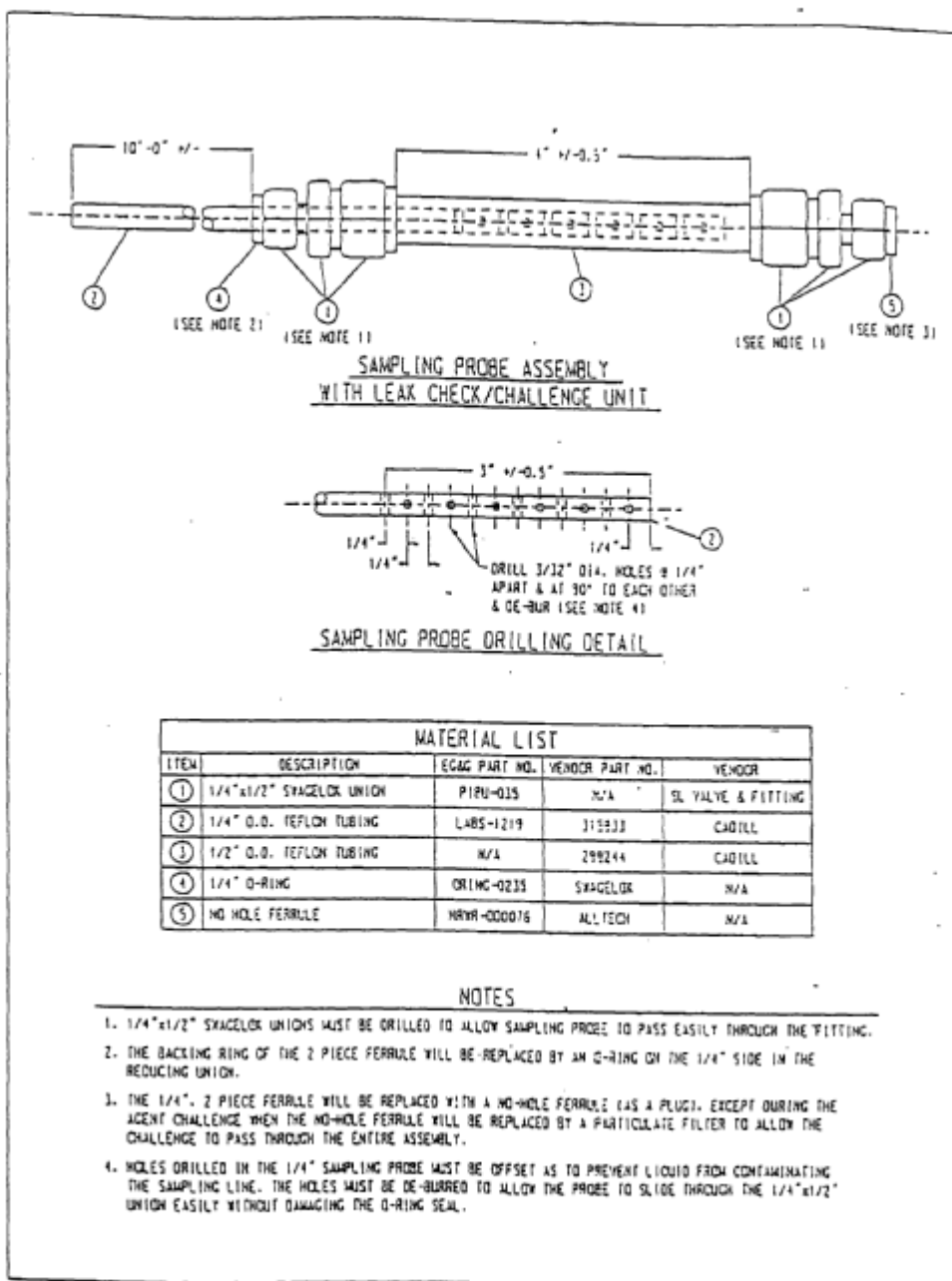
## **APPENDIX H**

### **ACAMS/DAAMS VX SAMPLING PROBE CONFIGURATION**



## **APPENDIX I**

### **GB SAMPLE PROBE FOR AIRLOCKS**



Sample Probe for Airlocks  
Appendix J to Agent Monitoring Plan  
CORL 23, Revision B  
Page J-2



## **APPENDIX J**

### **VX MPF Discharge Airlock Air Cooled Sampling Probe for ACAMS and DAAMS**

